II—FURTHER STUDIES AMONG THE AMERICAN LONGICORNIA.

This paper is merely a continuation of that which appeared in the preceding number of this series of memoirs and comprises the portions of the family Cerambycidæ not there included, so far as the more or less limited material forming part of the author's collection will permit. The revelation of lack of careful observation on the part of many authors who have written upon the Cerambycidæ, especially in regard to the structural characters pertaining to sex, is even more patent throughout almost all the groups here studied than might be inferred from the results arrived at in the first paper. These conclusions, being so out of joint with current conceptions, will give rise inevitably to much divergence of view wherever interest of any kind is awakened, and this, in the present stage of opinion, will generally take the form of opposition; but the only request on the part of the writer, and one that he greatly desires fulfilled, is that those who are disposed to criticize adversely shall first make themselves thoroughly familiar with the subject by careful and discriminating investigation. He has no excuse to make for the large number of taxonomic units and subunits proposed, the absolute value of which he is unable to fix in many cases, otherwise than that they seem actually to exist in nature and should therefore be recorded. However, to pretend that errors and probably many of them are not mingled with statements of the truth, would be equivalent to advocating a superhuman quality for the work.

Family CERAMBYCIDÆ.

Subfamily CERAMBYCINÆ.

Tribe LEPTURINI.

No very satisfactory way to classify the genera of this tribe has been discovered, the tarsal characters used by LeConte and Horn not being sufficiently radical and subject to exceptions. The genera

themselves are, however, well characterized as a rule. The tribe is subarctic in habitat, very few, comparatively, entering the tropics and includes in North America a larger number of species perhaps than any other equivalent subdivision of the family.

Rhagium Fabr.

Subgen. **Hargium** Sam.

In general habitus this genus harmonizes so little with any other that it would seem out of place anywhere, but the sharply spinose sides of the prothorax suggests a relationship with the *Pachyta* series in this part of the Lepturini. In the short thick antennæ of peculiar structure, prominent prosternal process and strongly costulate elytra, it is wholly isolated in the tribe and is perhaps a surviving remnant of an ancient and extinct line. Our species all belong to the group *Hargium* of Samouelle, which may have generic rather than subgeneric value, and are more or less close allies of the European *inquisitor* Linn. (*indagator* Fabr.). An inspection of the male sexual characters betrays very marked variety, and the material lumped together in almost every cabinet resolves itself into a number of rather well characterized species as follows:

Glabrous part of the tempora, adjoining the eyes, shorter, always distinctly less than half as long as the latter; longitudinal thoracic elevations always wanting; body shorter in form, the elytra always less than twice as long as wide; species characterizing the more boreal faunal regions.....2

Glabrous part of the tempora more developed, about half as long as the eyes; body more elongate in form; species more austral in distribution.....7

2—Impunctate median vitta of the prothorax narrow, ill-defined and frequently interrupted; cinereous vestiture dense, imparting a grayer appearance than observable in the following species; punctures of the head and pronotum dense, very deep and distinct; paler mottling of the elytra small and feeble, the two transverse bands barely traceable; abdomen black throughout; antennæ extending scarcely to the base of the prothorax; tufted cinereous vestiture of the under surface dense and very conspicuous; legs testaceous, with the usual sparse flying hairs, the femora and tibiæ blackish distally, the tarsi black; abdominal carina strong, extending well onto the last segment. Female with the fifth ventral as long as the fourth, trapezoidal, with rounded angles, the truncate and very pubescent apex less than half as wide as the base; last dorsal segment arcuately and moderately narrowing, the apex broadly sinuate, with rounded

angles. Male not at hand. Length 12.7–14.5 mm.; width 3.8–4.8 mm. California (Sacramento Co.).....**californicum** n. sp.

Impunctate thoracic vitta more or less broad, entire, very sharply defined and distinct; pubescence rather less dense, the two darker transverse elytral bands generally distinct, feebler and indistinct in *boreale;* abdomen mottled red and black as a rule, sometimes becoming wholly black.....3

3—Femora very stout, half as broad as the thoracic width; body stout; head well developed, the punctures perforate, moderate in size and well separated; eyes separated by two and one-half times their own width; antennæ extending fully to the base of the prothorax, of the usual structure; prothorax fully as wide as long, the punctures like those of the head but smaller, fully as sparse, not concealed by the vestitute; elytra subparallel, almost twice as long as wide, very much wider than the prothorax as usual, the ridges rather feebler than in any other species, black, the testaceous spots small; abdomen sparsely and not strongly punctured, sparsely pubescent in the usual clusters, testaceous, the median line and apical margin of all the segments black; segments three to five diminishing rapidly in length, the truncate apex of the fifth scarcely more than half as wide as the base. Length (♂) 16.0 mm.; width 5.2 mm. Massachusetts (Medford).....**crassipes** n. sp.

Femora of the usual thickness, much less than half as thick as the thoracic width.....4

4—Antennæ unusually small, the head much less developed than usual; body small in size, colored and pubescent as usual; head relatively coarsely and irregularly punctate, with an admixture of smaller punctures, the antennæ not as long as the head and prothorax, the latter formed as usual, the sculpture coarser and more irregular than in the preceding, though nowhere very close; elytra nearly as in the preceding but with stronger ridges and coarser sculpture; abdomen finely and remotely punctate, black, each segment testaceous except at the middle, base and apex, the fifth trapezoidal and a little longer than the fourth. Length (♀) 11.5 mm.; width 3.5 mm. Massachusetts (Malden).....**parvicorne** n. sp.

Antennæ and head of the usual development.....5

5—Apex of the fifth male ventral rectilinearly truncate and unusually broad, much more than half as wide as the base. Body in form and coloration nearly as in the preceding, the cephalic punctures rather coarse, perforate as usual and well separated; eyes separated by nearly three times their own width in the male; prothorax as usual, except that the apical is relatively less than the basal width, the sculpture close and subrugose, the median smooth stripe narrower than in any other except *californicum* though even; elytra confusedly mottled, the black rather predominating, the ridges strong and the sculpture very coarse, dense and deep; abdomen deep black throughout in the type, the last three segments diminishing gradually though very slowly in length. Length (♂) 12.5 mm.; width 4.3 mm. Wisconsin (Bayfield),—Wickham.....**boreale** n. sp.

Apex of the fifth ventral in the male narrower and distinctly sinuate, not at all exceeding half the basal width.....6

6—Larger species, stout in form, black, the elytra irregularly and finely mottled with testaceous as usual; head strongly and unusually closely punctate, the eyes not differing much sexually, separated by a little less than three times their width in the male; prothorax fully as wide as long, the apical and basal transverse depressions conspicuous, the punctures strong and well separated, smaller and much sparser than on the head; elytra with pronounced ridges and coarse and perforate, evidently separated punctures; abdomen often wholly black, sometimes with the segments partially rufescent; legs rufous and black, with clustered pubescence as usual; tarsi wholly deep black. Length (♂♀) 13.5–16.0 mm.; width 4.7–5.7 mm. Northeastern States.....**lineatum** Oliv.

Smaller species and relatively more slender, otherwise nearly similar, except that the punctures of the head are very much more widely separated and scarcely larger or more close-set than those of the prothorax; eyes much more developed, separated by but little more than twice their width in the male, differing more sexually, being separated by nearly three times their width in the female; thoracic punctures uneven and generally widely separated; elytra as in the preceding but with more confluent sculpture; abdomen in great part red, the last three segments of the male diminishing rapidly in length; fifth segment of the female differing scarcely from that of the male, being relatively shorter than usual; median low carina of the genus very evident throughout the length. Length (♂♀) 10.8–12.2 mm.; width 3.4–3.9 mm. Massachusetts and Pennsylvania.

cariniventre n. sp.

7—Pronotum at each side of the median line even and without trace of longitudinal elevations. Body large and stout, of the usual sculpture, coloration and general habitus; head more evidently sulcate along the middle than in *lineatum*, the sulcus filled with dense prostrate white hairs, the punctures coarse and close-set; eyes well developed, unusually convex; antennæ as usual; prothorax relatively larger than in any other form except *crassipes*, otherwise as in *lineatum*, except that the sculpture is coarser and much denser; elytra nearly twice as long as wide, subcuneiform, with more prominent humeri than in *lineatum*, the ridges strong, the punctures coarse and densely crowded, very much denser than in *lineatum;* abdomen deep black throughout, shining, very finely and sparsely punctate, the pubescence less clustered than usual, the carina fine; fifth segment parabolic, longer than the preceding in the female; legs slender, black, the femora red only toward base. Length (♀) 17.5 mm.; width 6.3 mm. New Mexico.....**thoracicum** n. sp.

Pronotum with a strong glabrous longitudinal elevation between the median smooth line and each side; elytral ridges strong.....8

8—Form and coloration throughout nearly as in the preceding but more slender; head coarsely and still more densely sculptured, without so evident a sulcus and with notably less developed eyes; prothorax similar in form but smaller, coarsely, closely and irregularly punctate

and less pubescent, the punctures separated on the glabrous elevations; elytra similar, except that the sculpture is still coarser, subconfluent; abdomen black throughout and polished, finely, sparsely punctate, the last segment (♀) not parabolic but with the median part of the apex truncate and limited by distinct though obtuse angles, barely as long as the preceding segment; femora and tibiæ partially red. Length (♂♀) 11.5–17.0 mm.; width 3.8–5.5 mm. Colorado (Fraser—8000 feet—and in Boulder Co.) and New Mexico (Las Vegas).....**montanum** n. sp.

Form stouter, the coloration more rufous; head with less coarse and dense punctures, the glabrous part of the tempora rather shorter, not quite half as long as the eyes, which are more developed than in any other species, separated by less than twice their own width (♂) or but slightly less (♀); antennæ well developed, of the usual structure; prothorax as in *montanum* but with less coarse or dense punctures; elytra broad, feebly cuneiform, red, with irregular blackish maculation, the punctures unusually deep, coarse and contiguous though relatively not so coarse as in *montanum*, the humeri less prominent; abdomen red, with black segmental margins and median line, the punctures not so fine or sparse and more rugulose than in *montanum*, the fifth segment (♀) more narrowly and arcuately truncate medially. Length (♂♀) 14.5–19.0 mm.; width 5.0–6.3 mm. Mexico (Guerrero).....***mexicanum** n. sp.

There are certain very marked sexual differences in the conformation, sculpture and vestiture of the last dorsal abdominal plate of the female, and in this feature the distinction between *mexicanum* and *thoracicum*, for example, is well marked, the plate being large, concave, medially channeled and feebly pubescent in *thoracicum* and smaller, more convex, not channeled, densely pubescent and apically bilobed in *mexicanum*. These characters, in conjunction with those mentioned above, seem to show that there are a number of true species in this genus, in spite of the universally rather similar habitus—scarcely more marked, however, than in *Omophron* or *Heterocerus*.

Pyrotrichus Lec.

This genus was referred by LeConte to the tribe Encyclopini, differing from Lepturini in a rather indefinite character relating to the slope of the frontal part of the head, which in my opinion is not sufficient for tribal distinction. Of the type named *vitticollis* by LeConte, I have a very good pair taken in Alameda Co. The following, from southern California, differs in several important features:

Pyrotrichus cribripennis n. sp.—Elongate, moderately convex, dull in lustre, black, with pubescence throughout as in *vitticollis;* head quadrate, the eyes finely faceted, the emargination extending more than half way through them, the antennæ (♀) extending barely beyond the middle of the body, the tempora straight and parallel, nearly as prominent as the eyes, the basal angles right and sharply marked; prothorax much wider than long, the lateral prominences slightly behind the middle and obtusely angulate, more rounded anteriorly than posteriorly; apex much narrower than the base, the latter broadly, feebly bisinuate; surface convex, rather uneven, closely punctate, a large rounded elevation at each side of the striiform median line shallowly concave, the inner part of its anterior slope impunctate; scutellum very densely fulvo-pubescent; elytra nearly a third wider than the prothorax, two and three-fourths times as long as wide, rectilinearly parallel, gently narrowing arcuately in about apical fourth to the transverse apices, the outer angles broadly rounded, the sutural rather acute but not prolonged; surface even, with coarse perforate punctures, separated by rather less than half their diameters, each with a very short silvery hair decumbent within it near the bottom; under surface finely, densely punctate and with moderately close cinereous decumbent hairs, becoming coarser and very dense on the sterna and throughout the meso- and metasternal parapleura; legs slender, the basal joint of the hind tarsi two-thirds as long as the remainder, the second obtriangular, slightly elongate, their under surface with short and not very dense pubescence. Length 15.0 mm.; width 4.2 mm. California (Los Angeles Co.).

The single female in my collection differs from the female of *vitticollis* in its much larger size, in having the fifth antennal joint evidently shorter than the two preceding combined and not equal thereto, in having less prominent eyes or much less retracted tempora, with the basal angles more nearly right, in the wholly deep black abdomen, this being strongly rufescent in both sexes of *vitticollis* and in the longer and thicker tarsi.

Thesalia Csy.

The type of this genus was announced by the writer under the name *Acmæops lisa* Leng, the single example at hand seeming to belong to that species, but more careful perusal of the description of *lisa*, shows beyond doubt that the type is not *lisa* and the present opportunity is therefore taken to make it known under a different name as follows:

Thesalia rubriceps n. sp.—Slender, moderately convex, shining, black, the entire head and basal joint of the antennæ pale testaceous, the legs piceous-black, the anterior testaceous excepting the black tarsi; body barely at all pubescent; head moderate, wider than long, with very prom-

inent and finely faceted, deeply emarginate eyes, the much retracted tempora arcuately and feebly converging behind them to the obtuse angles at the deep and strong constriction extending equally across the base, the surface equally and rather strongly but not densely punctured throughout; antennæ slender, filiform, deep black excepting the moderately stout basal joint, extending to apical fourth of the elytra, the third joint but little longer than the fourth, the fifth as long as the two preceding combined; prothorax fully a third longer than wide, strongly constricted at apex, very feebly at base, strongly and obtusely tuberculate at the sides just before the middle; base just visibly arcuate and much wider than the apex, the surface evenly convex, with moderate and shallow, well separated punctures, each bearing a very small fulvescent hair; scutellum small, nude, rather longer than wide, obtuse; elytra rectilinearly subparallel, four-fifths wider than the prothorax, two and three-fourths times as long as wide, very feebly narrowing and slightly arcuate at the sides in about apical fifth to the broadly rounded apices, the sutural angles right and blunt; surface even, polished, very coarsely, deeply punctate, a little less coarsely apically, the punctures everywhere well separated by fully their own diameters, each bearing a short stiff suberect and fusco-cinereous hair; under surface sparsely cinereo-pubescent, the abdomen polished, finely punctate, closely so basally, very sparsely apically, the last ventral in the type evenly rounded, as long as the preceding; legs rather short, not very slender, the tarsi nearly as in *Pyrotrichus*. Length 7.3 mm.; width 1.8 mm. California (Marin Co.).

The type seems to be a male and differs from *Acmæops lisa* in having only the first antennal joint pale, the pronotum sparsely punctate throughout above, not densely punctured with a small smooth space near the base as in *lisa*, and in the widely separated elytral punctures, these being almost confluent basally in *lisa*, also in the black and sparsely, feebly setulose elytra, these being rufo-testaceous and clothed with fine golden pubescence in *lisa*. It is somewhat evident, however, that *lisa* also may be a *Thesalia* and I am unable to account for its assignment to *Acmæops*, in view of its deeply emarginate eyes, disagreeing thus with the most important distinguishing character of the genus *Acmæops*.

The genus *Thesalia*, of which the type is the above described *rubriceps*, evidently comes between *Pyrotrichus* and *Encyclops*, having the general form and sculpture of the elytra and legs of the former and the more salient characters of the head, antennæ and prothorax of the latter. *Leptalia*, on the other hand, is so close to *Toxotus* in general facies and structure, that the two could very well be united, were it not for the normal tibial structure of *Leptalia*, the singular tibial apex of *Toxotus* being wholly unsuggested, but

the basally constricted head in *Leptalia* occurs also in *Toxotus cylindricollis* and *lateralis*.

Hapalosalia n. gen.

The type of this genus is *Leptura vibex* Newm. This species, with a number of others more or less closely allied, such as *sphæricollis* and *ruficollis* Say, *scripta* Lec., and *aurata* Horn, have hitherto been placed in *Leptura*, with which they have no great affinity, either in structure or general habitus. The metasternal episterna are very much narrower than in any Lepturid type and the form of the prothorax, nature of the ornamentation and structure of the head, eyes and antennæ, show unmistakably that they are allied to *Leptalia* and *Centrodera* rather than to *Leptura*. Some individuals have the prothorax red and others black, but I am unable to say whether this is fortuitous chromatic dimorphism, as there seem to be no intermediates, whether it may be sexual in some cases, or whether it denotes specific standing. In a series of eight examples of *scripta* before me, the prothorax is normally black in seven and in the eighth, which happens to be the only female in the series, it is red but black anteriorly, at the sides beneath and with a large rounded central black spot. In three examples, male and female, of *sphæricollis*, the color is uniformly black throughout the body and elytra, and in a single female of *ruficollis*, where the entire prothorax is red, the form of the body and prothorax is so much stouter than in the females of *sphæricollis*, that I am disposed to give it a subspecific status, at least under the only available source of inference. The species are rather numerous and may be known by the following characters:

Elytra with irregular ornamentation, somewhat as in *Centrodera picta;* body black or piceous-black, the legs pale, the hind femora black apically, the antennæ and elytra pale luteous, the latter with some short disconnected black dashes externally and one from the middle of the base, all sometimes wanting; prothorax elongate almost as in *Thesalia* or certain *Centrodera* but only very finely, sparsely punctate. Length (♂ ♀) 6.2–7.5 mm.; width 1.4–2.1 mm. Oregon and Washington State.....**scripta** Lec.

Elytra black, with median vitta and lateral margin pale.....2

Elytra wholly black.....6

2—Elytra with the median vitta greatly expanded, so that the color is luteous with rather narrow sutural and lateral black vittæ; prothorax

narrower than the head, of the usual strongly biconstricted, laterally prominently rounded form, finely, rather closely punctate; elytra more coarsely and closely punctate than in *scripta*, less coarsely, though distinctly, apically than basally. Length (♂) 7.6 mm.; width 2.1 mm. West Virginia.....**aurata** Horn

Elytra with the median vitta narrow, the ground color black.....3

3—Head scarcely at all impressed transversely. Body black, shining; legs pale, the tip of the hind femora black; antennæ (♀) very slender, piceous, testaceous basally, three-fourths as long as the body, the third joint not longer than the first; head not quite as wide as the prothorax, the tempora less prominent than the eyes as usual but nearly parallel, rounded basally, finely, sparsely punctate throughout; prothorax shorter than usual, not as long as wide, the lateral prominences subangulate; punctures fine and sparse but distinct; basal constriction prolonged anteriorly along the median line for a short distance; elytra shorter than usual, but little more than twice as long as wide, parallel, very obtuse at apex, the apices rounded, black, each with a discal yellow vitta and pale margin from the base to apical fourth, the punctures deep and coarse but well separated, smaller apically; abdomen pale, clouded with piceous, finely, rather closely punctulate. Length (♀) 6.8 mm.; width 1.8 mm. Wisconsin (Bayfield),—Wickham.....**lineicornis** n. sp.

Head more or less deeply impressed transversely between the eyes...4

4—Tempora nearly parallel behind the eyes, rounding at base. Body black, the surface polished; legs and antennæ as in the preceding, except that the latter (♀) are longer, being as long as the body and with the third joint one-half longer than the first; head almost impunctate; prothorax scarcely as wide as the head, longer than wide, very convex, the sides strongly, evenly inflated medially, not at all anguliform; basal constriction feeble discally, not at all prolonged medially; punctures extremely minute and sparse; elytra more elongate, nearly two and one-half times as long as wide, parallel, rounded at the tips, black, each with a yellow vitta which is broad at base, gradually narrowing and disappearing before the middle, the pale lateral edge disappearing posteriorly; punctures moderate, deep and perforate, separated basally by nearly twice their diameters; abdomen pale, the basal segments black at the sides basally. Length (♀) 8.0 mm.; width 2.3 mm. Wisconsin (Bayfield),—Wickham.....**læviceps** n. sp.

Tempora converging behind the eyes; elytral vitta much longer. Body and abdomen black throughout, the legs as in the preceding; antennæ (♀) piceous-black, very slender, nearly as long as the body; prothorax elongate, a little narrower than the head, the sides prominent before the middle; punctures fine and sparse but distinct; elytra fully two and one-half times as long as wide, parallel, more coarsely and closely punctate than in the preceding, the punctures basally separated by their own widths, the discal yellow stripe almost attaining the apex, near which it is frequently dilated almost to the suture. Length (♀) 8.4 mm.; width 2.3 mm. Pennsylvania. [*nitidicollis* Horn].....**vibex** Newm.

A—Body and abdomen black, the legs as in the preceding, the prothorax wholly bright rufous; antennæ piceo-testaceous, longer than the body in the male; head nearly similar; prothorax relatively much narrower, more decidedly elongate, the sides more rounded and less prominent, the punctures minute and sparse; elytra gradually cuneiform, long, obtuse at apex, punctured as in *vibex* and with a nearly similar vitta, except that it is attenuated, gradually disappearing near the apex. Length (♂) 6.5–7.2 mm.; width 1.6–1.8 mm. Indiana.....**fragilis** n. subsp.

6—Black throughout the body, abdomen and elytra, the antennæ very slender, blackish, testaceous basally; tempora but feebly narrowed behind the eyes; prothorax of the usual form, minutely, sparsely punctate, about as wide as the head in both sexes, rounded at the sides; elytra rather broad, parallel (♀) or narrower though only feebly cuneiform (♂), deeply, rather coarsely but not densely punctate. Length (♂ ♀) 6.5–8.2 mm.; width 1.8–2.3 mm. Canada and Wisconsin. [*allecta* Newm.].....**sphæricollis** Say

A—Similar in almost every feature, except that the body is slightly broader in form, the prothorax entirely bright red and differing more especially by the form of the latter, which is narrowed more strongly at apex, with the convex intermediate portion more transverse. Length (♀) 8.8 mm.; width 2.6 mm. Canada. [*pauperculа* Newm.].....**ruficollis** Say

The difference in antennal structure and form of the prothorax between the females of *lineicornis* and *læviceps* is very remarkable. Just what the true relationship between *fragilis* and *vibex* on the one hand, and *ruficollis* and *sphæricollis* on the other, may be, I have not material enough at present to determine. There is a remarkable constancy throughout the genus in the peculiar coloration of the legs, pale with the hind femora alone black at apex, although in both *ruficollis* and *sphæricollis*, the other legs become also partially dusky, and in *aurata* they are entirely pale.

Centrodera Lec.

The type of the following species has been in my cabinet as the male of *nevadica* Lec., with a query, for many years; but, as it appears to be different, it should take a more specific name as follows:

Centrodera oculata n. sp.—Elongate, moderately convex and shining, clear red-brown throughout, the legs and antennæ concolorous, except that all the joints of the latter after the fourth are deep black apically, the last joint with an ante-apical black band; pubescence rather long, ashy, sparse and decumbent; head a little wider than the prothorax, the eyes very large and convex, coarsely faceted and separated by barely half of their own width; antennæ long and slender, about as long as the

body, the third joint barely longer than the first, much longer than the fourth and much shorter than the fifth as well as all the following; prothorax distinctly elongate, strongly constricted near the apex, less strongly near the base and angularly prominent at the middle of the sides, the base much wider than the apex, bisinuate; surface strongly convex, deeply impressed along the middle between the constrictions, finely and closely punctate; scutellum densely pubescent, fully as long as wide, acutely ogival; elytra at base nearly twice as wide as the prothorax, about four times as long, feebly tapering, broadly rounding at apex to the rounded sutural angles, the surface perfectly even, coarsely, closely punctured basally, much more finely and feebly posteriorly; legs moderate, slender, the basal joint of the hind tarsi nearly as long as the remainder. Length (♂) 17.5 mm.; width 4.0 mm. California (Mt. Diablo).

Differs from *nevadica* in its relatively wider and more strongly punctate elytra, in having the lateral prominences of the prothorax apparently more angulate, the apex much narrower than the base and in the very large eyes. The last two features are of course to a considerable degree subject to sexual modification, but it is probable that the eyes are also notably large in the female; the original description does not state whether the antennal joints in the female type of *nevadica* are black at apex, but this feature in the male of *oculata* may also be sexual in nature. The prothorax being much wider at base than at apex, together with the rather different zoological habitat, would seem to indicate, at any rate, that *oculata* is not exactly the same as *nevadica*.

Centrodera tenera n. sp.—Small and very slender, parallel, uniform dark red-brown in color, the antennæ obscure testaceous, having the apical two-thirds of joints five to eleven black; pubescence gray, decumbent, uniform, rather short and only moderately dense throughout; head very finely, closely punctulate, the median stria distinct; eyes large, very coarsely faceted and separated by two-thirds of their own width; antennæ very slender, fully as long as the body, the fifth joint as long as two to four combined, fourth two-thirds as long as the second; prothorax evidently elongate and narrower at apex than at base, strongly biconstricted, barely at all impressed along the middle, the median lateral prominences strong but obtuse; punctures fine and dense, with a smooth median line toward base; elytra three times as long as the head and prothorax, two-thirds wider than the latter, parallel, rapidly obtusely rounded at apex, finely, very feebly, sparsely and somewhat unevenly punctate, producing the appearance of two or three vague longitudinal lines of denser pubescence; legs slender, the basal joint of the hind tarsi almost as long as the entire remainder. Length 10.5 mm.; width 2.3 mm. California (San Diego).

The single type is probably a male and was sent to me among

specimens of *Aneflus linearis* by Mr. Ricksecker. It does not appear to be allied in any way closely with *nevadica*, and is widely distinct from the preceding.

Ortholeptura n. gen.

The body is elongate, very much as in *Centrodera* throughout, except that the legs, and especially the tarsi, are much longer, the latter almost as densely clothed with short pubescence beneath. The eyes are large, convex and prominent, coarsely faceted and with a relatively small but deep, angulate emargination, the antennæ long and moderately slender, the fourth joint distinctly shorter than the third or fifth, the head before the antennæ as in *Leptalia* and the palpi slender. The prothorax is subcylindric, only very slightly protuberant at the sides, only moderately biconstricted and is dorsally channeled feebly along the middle, the elytra with the sutural angle strongly spiniform in typical species. The type is the following:

Ortholeptura oculea n. sp.—Elongate, relatively slender, convex, shining anteriorly, the elytra feebly alutaceous, feebly pubescent, pale flavotestaceous throughout, except some small maculation as stated; head with small and well separated punctures, becoming fine and close near the eyes, which are very large and convex, separated above by barely one-half more than their width, extending almost to the base, which is abruptly constricted behind the extremely short and retracted, arcuately converging tempora; antennæ (♂) about as long as the body, pale, the fourth joint fully four times as long as wide, four-fifths as long as the third and three-fourths as long as the fifth, barely as long as the first, which is thickened and curved apically; penultimate joint of the maxillary palpi barely two-thirds as long as the last; prothorax a fourth longer than wide, the arcuate apex but little narrower than the broadly bisinuate base, the basal angles obtuse; sides very feebly arcuate submedially; basal constriction short but very deep discally, the apical broad and deep, the median line acutely but broadly impressed from the centre to the apical constriction; punctures well separated, strong, moderately coarse and unequal laterally, becoming very fine, sparse and feeble medially; surface with the apical and basal beads and two elongate central spots blackish; scutellum acutely triangular; elytra four times as long as the prothorax, widest at the humeri, where they are not quite twice as wide as the prothorax, strongly but not very densely punctate, gradually more finely posteriorly, each with two small elongate black spots near basal fifth, the outer on the flank and the smaller of the two, also with two subsimilar elongate spots just before the middle and more approximate, the outer in advance and smaller than the inner; sutural spine long; hind tarsi somewhat longer than the tibiæ. Length 21.0 mm.; width 5.3 mm. California (Truckee).

The single male type has been in my cabinet for many years under the name *Leptura valida* Lec.* The original female type of the latter, from Shoalwater Bay, near the Columbia River, as figured, is very much stouter and has the sides of the prothorax more prominent medially; the prothorax is said to have fine dense punctures, intermingled with some that are coarse and sparse, and the elytral spots are nebulous and in three series. In *oculea* the thoracic sculpture seems to be different, the penultimate palpal joint much shorter, and the elytral spots are smaller, sharply defined and in two series only, there being no trace of maculation behind the middle. Having in mind the differences noted, in conjunction with the different conditions of environment between the northern seacoast, and 6000 feet elevation in the southern Sierras, it is to be presumed that the two species are different. But, in any event, it is quite certain that this type forms a distinct genus in the neighborhood of *Leptalia* and *Centrodera* and is distinctly out of place in *Leptura*. In *Leptura insignis* Fall, from Monterey, which seems to be congeneric, the elytral apices are rounded and wholly unarmed and the elytral ornamentation somewhat more extended, showing that the spiniform sutural angles do not constitute an essential generic character, although unknown in *Leptura*. In the male of *insignis*, the sides of the apical sinuate truncature of the abdomen are acute but dentiform; in *oculea* they are much produced posteriorly, slender and spiniform, this comparison being made with a male of *insignis* in the National Museum; *valida* is also represented in that collection by several typical females, taken near the mouth of the Columbia River.

Stenocorus Fabr.

The use of the names *Stenocorus*, *Stenochorus* and *Toxotus*, in the latest European catalogue, is erroneous in great part, but the matter is cleared up very well by Aurivillius in his recent general catalogue, where *Stenocorus* is shown to be the proper generic name for our species now known as *Toxotus* Serv. The genus *Stenocorus* forms a remarkably isolated group, because of the retraction of the tibial spurs, which occurs nowhere else in the tribe so far as

* There is a female of *oculea*, from Placer Co., California, in the National Museum; this female is much more slender than the same sex of *valida*.

known, except as a mere suggestion in *Leptura matthewsi*. Our species are heterogeneous and form four subgeneric groups as follows:

Third antennal joint very much longer than the fourth; emargination of the eyes extremely feeble, broadly sinuate.....2
Third and fourth joints equal, both much shorter than in the preceding section; emargination deep and subangulate.....4
2—Eyes rather coarsely faceted, larger and more prominent; fossa of the fourth palpal joint short, not attaining base or apex; pubescence even. Atlantic regions.....Group I
Eyes always very finely faceted and relatively small in size.....3
3—Middle coxæ rather widely separated by the broadly tumid mesosternum; elytra substriate, rugose, the pronotum nude and almost sculptureless; last palpal joint shorter, obtriangular, with the fossa entire, very deep; pubescence even. Atlantic regions.....Group II
Middle coxæ very moderately separated as usual; elytra never substriate, the prothorax always densely punctate and pubescent, with much less irregular surface and less acutely angulate lateral tubercles; palpal fossa deep, nearly attaining the apex but not the base; elytral pubescence uneven in lay, partially transverse or oblique. Atlantic and Pacific regions.....Group III
4—Middle coxæ very moderately separated; antennal swellings more pronounced and basal; narrowing of the head more abrupt than in any of the preceding; sides of the prothorax medially not so prominent, arcuate between the constrictions; pubescence even. Atlantic regions and Europe.....Group IV

The influence of geographic habitat is very pronounced in the evolution of these groups.

Group I.

Subgenus **Toxotopsis** nov.

The single known species is the *Leptura cinnamoptera* of Randall (*æsculi* Hald.); it is well known and apparently very constant in form, showing that it is geologically old; it needs no special description at this time.

Group II.

Subgenus **Eutoxotus** nov.

The type of this subgenus is the large and stout *Toxotus schaumi* of LeConte. The body is generally wholly black, the femora alone red, but black at base and apex. Mr. Leng has described a subspecies under the name *croceus* (Ent. Amer., 1890, p. 68), which is

yellow, except the tibiæ, tarsi and antennæ from the second joint outward, which are black. The elytra are peculiarly punctato-rugose and opaque, which, with the remarkable prothorax, renders *schaumi* very distinct, in fact unique, in facies.

Group III.

Subgenus **Stenocorus** Fabr.

This subgenus differs decidedly from all the others in our fauna in being very plastic, indicating a geologically more recent origin, the remarkable diversification of form being due also to its generally mountainous and climatically varied habitat; only two species so far as known inhabit the regions east of the Rocky Mountains. The very numerous species and subspecies may be characterized as follows:

Elytra obliquely truncate at tip, sometimes very narrowly; prothorax generally elongate or at least fully as long as wide 2
Elytra each narrowly and evenly rounded at tip, the sutural angle rounded or very obtuse; prothorax short, with the lateral protuberance less developed 12
2—Elytra vittate 3
Elytra unicolorous 7
3—Elytra blackish, with basal, lateral and apical margins rufo-piceous; beneath black, the abdomen, antennæ, palpi and legs rufo-piceous; head and prothorax black; punctures fine, the elytra rugose. Length 17.5 mm. California (Tejon)..... .....**nubifer** Lec.
Elytra more regularly vittate 4
4—Elytra wholly black, with a fine pale marginal vitta. Male rather stout, the elytra strongly cuneiform, flat above; body, legs and antennæ deep black throughout, except the marginal vitta and the abdomen which is wholly bright rufous; head densely punctato-rugose, subquadrate, the sides behind the eyes at first feebly converging then more strongly to the base, there being a very evident basal constriction; antennæ very nearly as long as the body; prothorax longer than wide, broadly biconstricted and rather acutely tuberculate at the sides, but slightly narrower at apex than at base, finely, closely punctate and with short gray pubescence, bristling with long erect hairs laterally; elytra becoming very prominent laterally toward the humeri, much narrowed at apex, the oblique truncature with a spiniform sutural angle; pubescence short, decumbent, even, streaming obliquely from the suture, coarser and more distinct in about inner half, extremely minute elsewhere, the marginal pale line narrow, even, well defined, extending from base very nearly to the apex; legs not very slender, the anterior and middle tarsi broader than usual. Female not differing much from the male,

except that the antennæ are shorter and more slender. Length (♂ ♀) 12.5–12.8 mm.; width 3.6–4.0 mm. California (Mt. Diablo and Los Angeles Co.).....**lateralis** Csy.

Elytra black, with a discal and marginal pale vitta.....5

Elytra black or piceous, with simply a discal pale vitta, the margins black, varying to almost wholly pale.....6

5—Body moderately stout, feebly convex, slightly shining, black, the elytral vittæ flavo-, the abdomen of the female rufo-testaceous, with the two basal segments black; head finely but strongly, very densely punctate, the eyes small, the sides behind them gradually converging and nearly straight to the neck; antennæ with the third joint much longer than any other; prothorax slightly elongate, feebly narrowed from base to apex, strongly biconstricted, feebly impressed dorsally between the constrictions, finely, very closely and strongly punctate and clothed with pale yellowish-cinereous, somewhat bristling pubescence; elytra strongly tapering from base to apex, one-half wider than the prothorax and between three and four times as long, strongly but not very coarsely punctate, the punctures in great part transversely confluent, the pubescence short, slightly oblique, not dense and inconspicuous, the flavate vittæ not quite attaining the tips, which are obliquely and rectilinearly truncate, with small acute and dentiform sutural angle. Length (♂ ♀) 14.0–21.0 mm.; width 3.3–6.0 mm. New England to Ohio.....**trivittatus** Say

Body black, similar to the preceding, except that it is smaller in size and with shorter legs and tarsi, the sutural black vitta not broadening basally and widely enclosing the scutellum, as it does in *trivittatus*, but narrow, not broader toward the scutellum, which it sometimes barely attains; pale vitta much broader. Length (♂ ♀) 13.5–16.0 mm.; width 3.4–4.4 mm. Ontario and Minnesota.

vittiger Rand.

Body black, flavo-pubescent, the prothorax strongly constricted anteriorly and posteriorly, shining, sparsely punctulate, canaliculate, armed at the sides with a large acute tubercle; elytra narrowed from the base, twice as wide as the prothorax, densely punctulate and rugose, the margin from base almost to the apex and a dorsal vitta on each, evanescent posteriorly, abbreviated anteriorly and bounded on each side by a distinct elevated line, pale, the apices obliquely subtruncate. Length 25.0 mm. Fort Vancouver and vicinity.

flavolineatus Lec.

Body slender, black, finely, densely sericeo-pubescent; lateral tubercles of the prothorax large, obtusely rounded, the constrictions strongly marked; elytra with the pubescence transverse, " testaceous, suture, discoidal stripe and side margin blackish " [in diagnosis (Tr. Am. Ent. Soc., 1874, p. 67)], " the discoidal vitta confined to the upper plane of the elytra and the lateral space between it and the margin ferruginous " [in subsequent remarks (l. c.)], the tips obliquely subtruncate; abdomen of the male ferruginous, of the female blackish, with silvery pubescence; antennæ (♂) stout and as long

as the body, or (♀) more slender and a little more than half as long. Length 13 mm. Oregon, Vancouver and British Columbia. **virgatus** Lec.

6—Male slender, deep black, rather strongly shining, the abdomen very slender, pale ferruginous, the elytral vitta rather near the suture and becoming broad basally, gradually fine posteriorly and disappearing before the apex; head densely punctato-rugose, briefly conical basally, the eyes small; antennæ slender, black, not quite as long as the body, the basal joint much longer than the fourth, third longer than the fifth; prothorax elongate, narrowed but very little from base to apex, the constrictions and lateral tubercle well developed; surface scarcely at all canaliculate, finely, closely punctate and with stiff, moderately abundant, yellowish-cinereous pubescence; elytra strongly, sinuously tapering, one-half wider than the prothorax and between three and four times as long, minutely punctate, sparsely laterally, with very short, not dense and rather inconspicuous cinereous pubescence, laid obliquely from the suture to the outer limit of the pale vitta, almost wanting thence to the sides, the lateral bead pale basally, the apical truncature very narrow, oblique, the sutural angle obtuse; abdomen bright ferruginous, very slender and cylindric, the fifth segment broadly arcuato-truncate. Female larger and stouter than the male, with only feebly tapering elytra, nearly similar otherwise but with rather denser pubescence, still smaller eyes and slightly shorter though barely more slender antennæ, about three-fourths as long as the body; abdomen much broader, less cylindric, more pubescent, less bright though pale ferruginous, the apical margins of the segments feebly infuscate; fifth ventral broad and transverse, the obtuse apex with the surface arched horizontally for a short space near each side to receive the elevated sides of the concave genital segment, the surface apically also feebly impressed at the middle; last dorsal broadly, arcuately truncate, with broadly rounded angles, the notch at the middle broad, very feeble and barely traceable. Length (♂) 11.5, (♀) 14.0 mm.; width (♂) 2.8, (♀) 4.0 mm. California (Lake Co.).....**pacificus** n. sp.

Male small and still more slender, nearly as in the preceding, except that the eyes are more prominent, the antennæ still more slender and finely filiform, with the basal joint much shorter and more slender, but little longer than the fourth, the third barely at all longer than the fifth and the sutural black vitta very narrow and more indefinite, the broad dark marginal vitta not black but pale brown, blackish at the humeri, the abdomen similar but apically much more sparsely punctate, with the fifth segment longer, being a little longer than the fourth and more strongly and evenly rounded throughout the apex. Female differing from the same sex of *pacificus*, which it nearly resembles in coloration, in its much smaller size and narrower build, the antennæ as in the male but a little shorter, the abdomen narrower, very much less pubescent, more shining, blacker, the segments rufo-piceous basally or in a transverse medial band, the fifth segment more angulate at apex, with the arches and median

impression obsolete. Length (♂) 8.3–9.7, (♀) 9.5 mm.; width (♂) 1.9–2.3, (♀) 2.7 mm. California (Lake Co.)...**tenellus** n. sp.

Male unknown. Female as in *pacificus* but shorter and relatively stouter, the coloration, sculpture and vestiture nearly similar, the antennæ similar and with a much longer basal joint than in *tenellus*, the third joint less elongate than in *pacificus*, piceo-rufous in color, with the basal joint black, slender, two-thirds as long as the body; prothorax much stouter and shorter than in either of the preceding, barely as long as wide, more narrowed to the more arcuate apex, nearly similar otherwise though with rather more sharply angulate tubercles; elytra nearly as in *pacificus*, except that the sutural black vitta fades out near the scutellum; abdomen as in *pacificus*, except that the fifth segment is evenly rounded throughout at apex and not broadly, obtusely angulate, and without trace of the two apical archings of the surface; legs fusco-ferruginous, black distally; last dorsal plate of the female broadly rounded at apex, becoming rather deeply sinuate at the middle. Length (♀) 13.8 mm.; width 4.0 mm. California (Lake Co.).....**hesperus** n. sp.

Male unknown. Female in form nearly as in the preceding but with relatively much narrower head and prothorax, the former being less developed than in any other species; eyes moderate, separated by nearly three times their own width; antennæ very slender, two-thirds as long as the body, very pale flavo-testaceous in color throughout, the basal joint scarcely visibly less pale, the fourth relatively shorter than in the preceding; prothorax much narrower, longer than wide, the pubescence short, rather coarse, golden, not dense; elytra nearly as in *hesperus* but wholly pale in color, except a faint blackish streak from the humeri fading out near basal fourth; abdomen pale, densely punctulate, the bases and apices of the segments nubilously darker, the fifth segment much shorter and with two small sinuses nearly as in *pacificus* but smaller and more widely separated; last dorsal segment very different, being more narrowly and very evenly rounded at apex, without sinus. Length (♀) 12.0 mm.; width 3.3 mm. California (Lake Co.).....**parviceps** n. sp.

7—Elytral flanks shining, rather coarsely, sparsely punctate, with few if any minute punctules; pubescence throughout rather inconspicuous.....8

Elytral flanks alutaceous as elsewhere, because of the very dense minute punctulation, sometimes with a few slightly larger punctures sparsely intermingled; general pubescence long, denser, more diversely laid and conspicuous; antennæ differing sexually, being much longer and heavier in the male as in *lateralis*.....11

8—Elytral vestiture even from the suture nearly to the limits of the more shining and subglabrous flanks, composed of short, oblique, moderately close and rather inconspicuous hairs nearly as in the four preceding species; antennæ not differing much sexually, resembling the *trivittatus* and *pacificus* groups.....9

Elytra each with a narrow axial line near inner third, in which the hairs become oppositely oblique as in a cow-lick; antennæ differing sexually, being much longer and heavier in the male.....10

9—Elytra with an unusually wide oblique apical truncature, this being more than a third as wide as the elytron at three-fourths from the base, the sutural angle minutely dentiform, the elytra very much more gently and feebly tapering posteriorly than in the females of the three preceding, where the truncature is relatively very much narrower. Female type black, with wholly ferruginous elytra, legs and antennæ, the abdomen black, with the basal parts of the segments obscurely rufescent, wholly ferruginous apically; head, eyes and antennæ nearly as in the preceding; basal joint of the latter but little more than twice as long as wide; prothorax but little longer than wide, a good deal narrowed from base to apex, with the constrictions deep, the tubercle pronounced; surface finely, densely punctate, not densely cinereo-pubescent and differing from those described above in being concave medially; elytra much less than one-half wider than the prothorax, between three and four times as long, distinctly tapering throughout; pubescence in less than inner half obvious but very short, decumbent and evenly oblique throughout, almost wanting thence laterally, the punctures very fine and close internally, with some that are slightly larger in great part serial in arrangement basally, becoming notably larger and deep laterally and fine posteriorly; fifth ventral broadly angulate at apex, not impressed or otherwise modified; last dorsal broadly arcuato-truncate, without obvious median emargination or sinus. Length (♀) 10.3–11.8 mm.; width 2.9–3.3 mm. California (Lake Co.).....**truncatulus** n. sp.

Elytra with the apical truncature very narrow as usual in this part of the subgenus, distinctly less than a third as wide as the elytra at three-fourths from the base; form otherwise nearly similar. Female type rather slender, black, the entire elytra and legs pale brownish-testaceous, the antennæ dark rufo-piceous throughout, the basal joint not at all darker, the abdomen deep black, abruptly testaceous behind the third segment; head strongly and densely punctato-rugose, with very moderate eyes, the sides behind them evenly and gently converging; antennæ shorter than in the preceding, barely more than half as long as the body; prothorax just visibly elongate, with fine deep separated punctures, feebly conical, deeply biconstricted and with a distinct dorsal channel connecting the impressions, the pubescence short, coarse, not dense; elytra very feebly tapering from the gradually more prominent humeri, one-half wider than the prothorax and nearly four times as long, the vestiture as in the preceding, distinct in about internal, almost wholly wanting in external, half; abdomen shining and finely punctate, not densely pubescent; legs slender. Length (♀) 9.5 mm.; width 2.7 mm. California (Sta. Cruz Mts.).. .....**apiciventris** n. sp.

10—Form more rhomboidal than the two preceding, black, the entire elytra pale and uniform brownish-rufous, the abdomen rufous in the male; legs and antennæ wholly ferruginous, the basal joint of the latter scarcely at all darker than the remainder; head punctato-scabrous, with longer and closer pubescence than in the preceding, the eyes small as usual; antennæ (♂) rather thick, four-fifths as

long as the body; prothorax distinctly elongate, subcylindric, but very little narrower at apex than at base, moderately biconstricted, the lateral tubercles obtusely rounded; punctures small but strong, very dense, the sulcus obsolete, the pubescence long, rather dense but not quite concealing the surface sculpture; elytra fully two-thirds wider than the prothorax and not distinctly more than three times as long, very rapidly tapering from the prominent though rounded humeri to the apex, finely, rather closely punctate, except laterally, more sparsely basally and with numerous rather coarse and widely scattered punctures throughout, though especially toward base and closer on the flanks; pubescence golden-cinereous, short, not very dense, largely absent laterally. Male with the abdomen moderately narrow, slightly tapering, clothed not very densely with distinct pale pubescence; dorsal pygidium obtusely rounded, the surface finely, not very densely punctate, with the median line feebly cariniform, nearly flat elsewhere. Length (♂) 11.5 mm.; width 3.6 mm. California (locality not recorded).....**rufipennis** n. sp.

Form slightly more slender than in *rufipennis*, a little smaller in size but similar in coloration, except that the legs and antennæ are dark rufo-piceous, the basal joint of the latter black; head nearly similar, the antennæ (♂) nearly similar but rather more tapering distally, or (♀) much shorter and more slender than in the male, three-fifths as long as the body; prothorax narrower, still more elongate and barely at all narrower at apex than at base, similarly sculptured but with the pubescence much less abundant and shorter; scutellum narrower; elytra shorter, three-fourths wider than the prothorax and three times as long, the short pubescence nearly similar, the sculpture finer, the intermingled larger punctures less evident, almost wanting in the female, which also has numerous fine punctures, as well as larger, on the flanks; abdomen rufous in both sexes, blackish laterally toward base in the female; dorsal pygidium (♂) finely, sparsely punctate, without trace of a fine axial carinule, but with an elongate tubercle near each side; last dorsal (♀) broadly rounded, more transverse medially at apex but without medial sinus or emargination, the last ventral broadly rounded, feebly impressed medially near the apex. Length (♂♀) 10.5–12.0 mm.; width 2.9–3.4 mm. California (locality not recorded).....**flaccidus** n. sp.

11—Last dorsal (♀) narrow, gradually and arcuately tapering to the narrowly bilobed apex, the median notch deep, subparallel, rounded at the bottom and slightly deeper than wide. Body rather slender, black, the elytra pale brownish-yellow, the abdomen (♀) rufous, with the two basal segments wholly or in part blackish; legs more or less pale piceo-testaceous, the antennæ pale, with the basal joint black; head densely punctate, the eyes small but rather prominent, the front closely pubescent, striate medially; antennæ (♂) moderately thick, not quite as long as the body, or (♀) a little thinner and three-fifths as long as the body; prothorax elongate, distinctly narrower at apex than at base, strongly biconstricted, minutely and very densely punctate, broadly, feebly impressed along the middle and with long and very dense golden pubescence, forming

a strong double median cow-lick which does not attain base or apex; elytra one-half wider than the prothorax and three times as long, tapering in both sexes, everywhere minutely, closely punctate and pubescent, the hairs rather long, dense, golden, generally nearly transversely laid, with one or two more prominent irregular lines of diverse lay. Length (♂ ♀) 11.5–12.5 mm.; width 3.1–3.6 mm. California (probably the coast regions).....**aureatus** n. sp.

A—Nearly similar to the preceding but a little stouter and with silvery and not golden thoracic vestiture, which is however similarly dense and thrown up in two similar medial longitudinal cow-licks, differing distinctly in having the entire antennæ, including the basal joint, very pale yellowish-testaceous in color, similar otherwise to the male antennæ of *aureatus*, except that the fourth joint is still a little shorter, being less than twice as long as wide; eyes very slightly less prominent, similar otherwise; prothorax similar in its sculpture and elongate form; elytra similar in form, less alutaceous, the minute punctures less dense or distinct, especially on the flanks, the marginal bead blacker, pale basally; abdomen similar, the basal joint of the hind tarsi distinctly longer. Length (♂) 12.0 mm.; width 3.5 mm. California (locality unrecorded),—Levette.

gilvicornis n. subsp.

Last dorsal (♀) broader basally, more rapidly narrowing and with slightly arcuate sides to the relatively more narrowly bilobed tip, the median nick broader and shallower, angulate and forming a right angle; body larger and much stouter, black, the elytra darker red-brown, the abdomen (♀) ferruginous, blackish at the sides basally; legs brownish-testaceous, the antennæ darker, brownish, with the basal joint black; head nearly as in the preceding but with smaller and less prominent eyes and scantier pubescence, the antennæ (♀) scarcely more than one-half as long as the body; prothorax larger and stouter, not quite so elongate and rather more conical but otherwise similar, except that the pubescence is paler yellowish-cinereous and much less dense, not concealing the sculpture, which is a little coarser; elytra nearly as in the preceding but broader and with shorter, less golden but more sericeous pubescence, which is similarly irregular. Length (♀) 12.7 mm.; width 3.9 mm. California (locality unknown).....**sericatus** n. sp.

Last dorsal (♀) much broader, parabolic in form, the relatively much narrowed apex bilobed, the nick angular and nearly as in *sericatus*, the body nearly similar in form, coloration and sculpture but still stouter; head similar but with still shorter and less conspicuous pubescence, the antennæ similar; prothorax shorter, stout, only very little longer than wide, narrower at apex than at base, moderately biconstricted, the obtuse and very moderate tubercles rather more anterior, the punctures finer and denser, the pubescence short, still more cinereous and not concealing the surface; elytra as in *sericatus* but broader, the grayish pubescence still shorter and the irregular lines much less evident. Length (♀) 13.5 mm.; width 4.25 mm. Utah.....**subpinguis** n. sp.

Last dorsal (♀) long and relatively more parallel, rapidly and obtusely rounding at the apex and broadly, very faintly and gradually sinuate medially; body larger and much stouter than in any of the preceding species of this group, black, the abdomen black, the last three segments dark and obscure rufous; elytra throughout brighter rufous, the sutural and the lateral double beading, as well as the extreme apices, black; vestiture inconspicuous, golden, unusually short; legs black throughout; head very densely, rugosely sculptured and dull, the eyes small; antennæ (♀) short and slender, deep black throughout, but little more than half as long as the body, of the usual structure; prothorax large, a little longer than wide, strongly biconstricted, the median obtuse prominences conspicuous; punctures small and close but with polished interspaces; elytra about twice as long as wide, tapering, the larger punctures, scattered among the very fine dense punctulation, smaller than usual; pubescence rather sparse and very inconspicuous but arranged as in *aureatus* and allies; legs long and very slender. Length (♀) 14.5 mm.; width 4.8 mm. Oregon (Clackamas Co.) . . . **oregonensis** n. sp.

" Black; head and thorax lanate; venter and elytra testaceous, the latter entire. Length 12 mm.; width 3 mm. Oregon." . . . . **vestitus** Hald.

12—Color testaceous, extremely minutely pubescent; head fuscous; prothorax not at all longer than wide, bisinuate at the sides, the lateral tubercle feebler than usual and obtusely rounded, the surface convex, moderately constricted anteriorly and posteriorly, vaguely canaliculate; elytra slightly punctulate, almost parallel, the apex rounded; eyes small but rather convex, finely faceted; antennæ with the third and fifth joints equal, the fourth two-thirds as long; the head is feebly narrowed behind but not rounded on the sides. Length (♀?) 15.0 mm. Yellowstone Basin.

obtusus Lec.

Color deep black throughout, except the elytra, which are very pale luteo-albid, the suture and a lateral vitta at the upper part of the flanks black, the elytral apex and also the abdomen black; head very densely punctato-scabrous, with rather long and coarse but not dense hairs, fusco-cinereous in color, the eyes small and but feebly prominent, the sides behind them short, converging and evenly though feebly arcuate; antennæ (♂) rather heavy, as long as the body, the third joint much longer than the fifth; prothorax shorter than in any other species, not as long as wide, almost as wide at the feebly arcuate apex as at base, rather deeply bisinuate at the sides, with the tubercle strong though very obtuse and broadly rounded; apical dorsal constriction broad and shallow, the basal deeper and more angulate, the median line barely at all impressed; punctures fine, close, the pubescence as on the head, not concealing the sculpture; elytra not quite one-half wider than the prothorax and fully four times as long, rapidly tapering from the prominently rounded humeri to the apex, finely, feebly and not densely punctate and with very small and rather sparse, evenly distributed and very inconspicuous hairs. Length (♂) 11.8–12.0 mm.; width 3.5–3.7 mm. Washington State . . . . . **brevicollis** n. sp.

It is almost certain that *truncatulus* and *apiciventris*, in spite of their uniformly pale elytra, belong to the *pacificus* group of vittate species; this group, which seems to be peculiar to the maritime parts of California, is somewhat more inconstant in elytral ornamentation than either the more northern *virgatus* or the eastern *trivittatus*. *Rufipennis* and *flaccidus*, which are mutually closely allied, are in a measure intermediates between the *virgatus* and *pacificus* groups, and the *aureatus* group. Haldeman's entire description of *vestitus* is quoted above, and, as can be seen, it is totally ambiguous and useless; it is probable also that the original type has not been preserved, the name for many years having been applied to all the conspicuously pubescent Pacific coast species having uniformly pallid elytra. As its habitat is much more boreal than that of any above noted, except *oregonensis*, which is much larger, it probably has not been redescribed in the table. *Obtusus* Lec., is a peculiar type, and from the fact that *brevicollis* is founded on the male and *obtusus* probably on the female, it might be conceived that the former is at most a subspecies of the latter; but there are so many incongruities, generally not sexually diverse, notably the long pubescence of the head and prothorax in *brevicollis*, that there cannot be very much doubt, apparently, of the distinctness of the latter. The female elytra in forms having strongly tapering male elytra, are not "parallel" in any other known species, though very nearly so in the subgenerically different *cinnamopterus*.

Mr. Leng (Ent. Amer., 1890, p. 68) notes a form of *vestitus*, which he names *ater;* as it is not described this must be considered purely a manuscript name. If the elytra are wholly black, there can be but little doubt that closer observation would prove it to be a different species, as variation in the genus seems to assume the diminishing form rather than intensification of elytral coloration.

Group IV.

Subgenus **Anisorus** Muls.

The only species of our fauna entering this subgenus, which comes very close to being a distinct genus, is the *Toxotus cylindricollis* of Say (*dentipennis* Hald., and *dives* Newm., also var. *atratus* Hald.), rather widely distributed in the Atlantic regions but not at all common. The prothorax distinctly tapers from base to apex and is

conical rather than cylindrical, but Say's species has probably been correctly identified.

Evodinus Lec.

Besides the type of this genus, named *Leptura monticola* by Randall, there is another rather closely allied species in my cabinet as named below. The genus *Evodinus*, of recent years suppressed and united with *Pachyta*, is valid, the prothorax being wholly as in *Stenocorus* and not at all like *Pachyta*, and the elytral ornamentation as in many true Lepturids; it is abundant in the European fauna, numerous species being listed under the name *Evodinus* in the recent European catalogue.

Evodinus vancouveri n. sp.—Male very slender, deep black, dull and finely, very densely punctate, the elytra slightly shining though minutely, deeply and very closely punctured, black, the humeri and a broad and very irregular common sutural vitta, from behind the scutellum to apical sixth or seventh, pale luteo-albid, the vitta contracted near basal fourth, linearly expanded behind the middle and bifurcating slightly at its posterior limit; head nearly as in *monticola*, the antennæ very slender, black throughout and as long as the body; prothorax as in that species but narrower, more elongate and very much less densely pubescent; elytra similar but narrower and with the small decumbent hairs sparser. Female throughout in form, sculpture and ornamentation nearly as in the female of *monticola*, except that it is less stout and that the prothorax is much narrower, more elongate and less pubescent, the antennæ deep black, and that there is a bilaterally abbreviated black basal fascia involving the scutellum; the antennæ are much shorter than in the female of *monticola* and especially with shorter outer joints, the hind tarsi notably shorter. Length (♂) 9.8, (♀) 9.5 mm.; width (♂) 2.8, (♀) 3.2 mm. Vancouver Island.

The difference between the almost wholly black elytra of the male and the pallid, laterally distantly trimaculate elytra of the female, is remarkable and never occurs, so far as noted, in *monticola;* the apex also is black, and the discal spot near basal fourth in the female is very small.

Parapachyta n. gen.

The genus for which this name is proposed is also allied to *Pachyta*, but is very different in general habitus and in many important structural features, the body being much more elongate and the elytra more nearly parallel, never so peculiarly cuneiform as in *Pachyta*. It differs radically from *Pachyta* in the more de-

veloped head, this being relatively unusually small in that genus, in its very large, prominent and coarsely faceted eyes, more elongate and even more acutely tuberculate sides of the prothorax, system of sculpture and many other characters, of more or less weight from the generic viewpoint. Its type is *Pachyta spurca* Lec., a large pallid and coarsely sculptured species of the true Pacific coast fauna.

Gaurotes Lec.

If we limited this genus to those species having a protuberant mesosternum, the only representatives in my cabinet would be *cyanipennis* Say., and the Mexican *multiguttatus* Bates, which diverge widely from each other in sculpture, coloration and vestiture, showing how ineffectual it may sometimes be to base genera upon a single character, however important it may seem. If, however, we entirely abandon the mesosternum, the inconstancy of which has long been known, and look broadly at the species *cyanipennis*, *cressoni* and *abdominalis*, we find a constant peculiarity of habitus, separating them widely from *Acmæops*, and caused by the short broad form of body, relatively small and transverse, apically much narrowed and strongly, transversely biconstricted prothorax and very small head, with the front not prolonged. This composite habitus constitutes the real generic difference between *Gaurotes* and *Acmæops* and, in this light, examining *Acmæops thoracica*, *bivittata* and *nigripennis*, we find the identical facies of *Gaurotes*, showing that they should form part of *Gaurotes* and not of *Acmæops*. The variety of sculpture and ornamentation within the limits of *Gaurotes*, thus amplified, becomes very marked, but to show that this fact has very little significance here, other than to prove that the genus is composed of several subgeneric groups —three in number as far as now known, represented by *bivittatus*, *multiguttatus* and *cyanipennis*,—we have only to point out that the greatest difference of this kind lies between the only two species that are typical in regard to mesosternal structure; that is, *cyanipennis* and *multiguttatus*, one with shining metallic, simply and sparsely punctate and virtually glabrous elytra, the other with duller black elytra, having dual vestiture, consisting of condensed clusters of decumbent white hairs, with others erect, stiffer and black intermingled. As proving the dominant importance of

general bodily structure, however, it is to be noted that these two species have the form, size and habitus of the elytra, prothorax and head virtually identical; it might be further noted that it is only in those forms having protuberant mesosternum, that the elytra become bidenticulate or biangulate at apex, this being very pronounced in *multiguttatus* and feebly evident in *cyanipennis*, all the other species having broadly rounded tips, with sharply angulate but wholly unproduced sutural angle.

The genus *Gaurotes*, therefore, will be made up in our fauna of the species *cyanipennis* Say,—the type of the genus,—*cressoni* and *abdominalis* Bland, *thoracicus* Hald., *bivittatus* Say, *nigripennis* Lec., this being by no means a variety of *bivittatus* but a distinct and valid species, of which *varians* Lec., is probably the male, *fusciceps* Lec., which is also a valid species and not a variety of *bivittatus*, and the following two, the first of which is closely allied to *bivittatus*, being almost identical in ornamentation and sculpture:

Gaurotes oblongus n. sp.—Form, coloration, two black vittæ on each elytron and elytral sculpture of rather coarse, deep, moderately separated punctures, as well as the very sparse vestiture of infinitesimal hairs throughout, as in *bivittatus;* head relatively still smaller, only two-thirds as wide as the prothorax, black, testaceous before the antennæ and with a large transverse basal area of the same color, strongly, densely sculptured, perfectly flat between the small eyes, which are scarcely at all prominent, the moderately retracted tempora at first subparallel, then converging to the base; antennæ longer and thicker, black, the first and fifth joints relatively longer; prothorax testaceous, larger, more transverse, a third wider than long and evidently wider at base than across the ante-median lateral prominences; legs thick, wholly black. Length (♀) 9.8 mm.; width 4.2 mm. Nebraska.

Differs from *bivittatus* in its larger size, relatively smaller head, with much less prominent eyes, in the red area of the occiput, thicker antennæ, with much more elongate basal joint, in the very much thicker legs and tarsi and basally broader prothorax. The subgeneric group to which it belongs includes also *thoracicus* Hald., *nigripennis* Lec. (*varians* Lec.) and *fusciceps* Lec., and has the vittate form of ornamentation predominating as in *Disonycha* of the Chrysomelidæ, where numerous true and not closely related species have nearly similar or virtually identical elytral ornamentation.

The following species is allied to *cressoni* but is larger and much stouter:

Gaurotes lecontei n. sp.—Oblong, convex, glabrous above, very shining, black, the elytra bluish-green; antennæ and legs black, the femora broadly banded with testaceous near the tip; abdomen wholly black; head small, with rather close-set coarse punctures, mingled with smaller ones, the surface smooth anteriorly; antennæ, eyes, tempora and prothorax as in *cressoni*, the first a little more slender; elytra three-fifths longer than wide, feebly cuneiform, fully twice as wide as the prothorax, one-half longer than wide, obtusely rounded behind; punctures sparse, separated by from three to six times their diameters, coarse basally, becoming very minute apically; apices not truncate; under surface shining, minutely punctate, more strongly and rather closely on the sterna, very remotely on the abdomen; mesosternum not protuberant. Length (♀) 11.5 mm.; width 5.4 mm. Oregon.

Differs greatly from *cressoni* in the characters stated, as well as in the black and not bright red abdomen and very much sparser, less coarse and antero-posteriorly more unequal elytral punctures.

The genus *Acmæops*, as at present constituted, is even more composite than *Gaurotes;* for, removing *bivittata*, *thoracica* and related species from *Acmæops* and placing them in that genus, where they evidently belong as stated above, there still remain three generic groups of species definable as follows:

Front broad, not or scarcely prolonged, the genæ short; pronotum never bitumorose; elytra not or rarely at all truncate at tip.....2
Front narrowed and more or less prolonged as in *Ophistomis*, the genæ longer; pronotum generally bitumorose basally, the elytra nearly always sharply sinuato-truncate at tip.....3
2—Body short and broad in form, the antennæ shorter and notably thick. [Type *Acmæops tumida* Lec.].....**Brachysomida**
Body elongate and slender, the antennæ long, slender and filiform. [Type *Leptura longicornis* Kirby.].....**Leptacmæops**
3—Body smaller, shorter and relatively broader than in *Leptacmæops*, the antennæ less attenuate. [Type *Leptura proteus* Kirby].
Acmæops

These three groups differ markedly among themselves in habitus, as well as in special structural features, with no intermediate forms, proving them to have rather the nature of genera than mere sections of a single genus. The only one common to the nearctic and palæarctic faunas is *Acmæops*, the species *pratensis* Laich., with many synonyms, being common to the two continents. *Brachysomida* is confined to the Pacific fauna of North America, while *Acmæops* and *Leptacmæops* are purely subarctic, descending to the southward along the Rocky Mountain system. *Dinoptera* Muls., may be

closely related to *Brachysomida*, but it can be inferred, at least, that the two are not identical from the fact that in the type of *Dinoptera*, the prothorax is much more elongate and usually bright red, while in *Brachysomida*, the head and prothorax are invariably intense black, the only parts subject to color variation being the elytra, abdomen, legs and antennæ; these variations are of no value, even as fixing varieties or so-called aberrations; the antennæ in *Dinoptera collaris* are much longer than in *Brachysomida*.

Brachysomida n. gen.

The species of this genus are exceedingly numerous, so much so that the variety of form, or the apparent instability, revealed by successive arrivals of new material, led Dr. LeConte to believe that those he had described were in great part united by intermediates, and he thereupon proceeded to suppress many of them, refraining at the same time from defining any more, so that only about a third of the species now in my collection have ever been described. But LeConte did injustice to the realities of nature in thus suppressing so much of his more discriminative work, whatever the external influences or internal reasoning that may have moved him; in short, the proportion of synonymy now accredited to him in the lists, almost everywhere in the Coleoptera and even where self-imposed, is somewhat largely without warrant and untrue, as is fast becoming evident.*

I have not attempted to indicate other than a specific status for more than a few of the following forms, for as they are all amply distinct in appearance, I am uncertain which to regard as species under the present day ultra-radical conception of that term, and which to put in subordinate station, leaving such questions for future determination. It can only be said that those forms, as for instance *trinitatis*, that I have personally been able to collect in considerable number in their native environment, betray no marked variability beyond the mysterious color dimorphism characterizing the genus, the majority of the examples of that species of both sexes having uniform deep blue elytra, while about a third of them have uniform pale red-brown elytra, without intermediates in color,

*Mr. Pierce, of the National Museum, has recently found it necessary to reinstate several of the LeContean species of *Thecesternus*, that were suppressed by the author himself.

showing that it is a true dimorphism and not mere variability, as ordinarily conceived. This dimorphism also pervades *Leptacmœops*, with a few notable exceptions, such as *falsa*, but is not so evident in the true *Acmœops*, such forms as *discoidea* and *directa*, being remarkably constant in coloration. It is a singular condition, where some species are subject to radical dimorphism and others, evidently congeneric, are absolutely constant within the narrowest limits; it simply indicates what may some day be recognized as subgeneric groups within the genus.

Prothorax rather acutely and abruptly though not strongly tuberculate at the sides; body very deep black throughout, the elytral punctures coarse 2

Prothorax with the sides very feebly, obtusely prominent and rounded invariably before the middle and just behind the apical constriction, which is always large, deep and very evident; elytra never deep black and very moderately sculptured, almost always with more or less blue, greenish or æneous coloration 3

Prothorax as in the preceding group but having the lateral prominence virtually wanting; body otherwise as in section 3 19

2—Form stout, oblong, rather convex, shining, deep black, the elytra more blue-black than the anterior parts; upper surface glabrous, the under with a few small scattered hairs, the legs and first five antennal joints with short and close-set stiff hairs, the remainder of the antennæ minutely, very densely puberulent and dull, the fifth joint claviform, with an elongate opaque spot on the under surface in nearly apical half; head densely and moderately punctured, the tempora converging and arcuate behind the eyes; antennæ (♂) extending to apical third of the elytra, the third joint longer than the fourth but shorter than the fifth; prothorax wider than long, evenly convex, with small but strong scattered punctures, the median line in part finely striate; scutellum nude and shining, elongate, acutely ogival; elytra parallel, not quite twice as long as wide, three and one-half times as long as the prothorax and three-fourths wider, rounded at apex, parallel, the sutural angle right but blunt; punctures coarse, irregular, in part somewhat confluent transversely but generally widely separated; abdomen minutely, sparsely punctate. Length (♂) 8.0 mm.; width 3.0 mm. Washington State.

atra Lec.

Form not so stout, convex, intense black throughout, glabrous above, the small sparse hairs of the under surface so minute as to be barely discoverable; legs with sparse and very minute hairs; head and prothorax strongly, densely, subrugosely punctate, the front depressed between the antennæ and the eyes; antennæ (♀) thick, not extending to the middle of the elytra, the third joint shorter than the fourth and two-thirds as long as the fifth; sides only very feebly converging but strongly arcuate between the eyes and the base; prothorax very short, one-half wider than long, much narrowed but

virtually not at all constricted at apex, with a polished punctureless space before the middle of the base; scutellum nude, polished, larger and much more obtuse than in *atra;* elytra three-fourths longer than wide, between three and four times as long as the prothorax and less than one-half wider, parallel, rounded obtusely at apex, the punctures even, only moderately coarse but very deep and perforate, closer than in *atra,* separated generally by but little more than their diameters; abdomen minutely, extremely feebly and remotely punctulate. Length (♀) 6.8 mm.; width 2.5 mm. Colorado (Summit of Mt. Arapahoe—elevation nearly 13000 feet) ..... **morata** n. sp.

3—Vestiture dark or blackish in color, inconspicuous 4

Vestiture pale cinereous to yellowish, always distinct 5

4—Body stout, oblong, moderately convex, deep black and rather shining throughout, the elytra dark steel-blue, sometimes violaceous toward the sides; pubescence dark, abundant but not distinct, long, fine and erect on the prothorax; head deeply and very densely punctate, the prothorax scarcely less strongly but loosely, the elytra rather coarsely, very deeply and closely, gradually more finely posteriorly; antennæ (♂) a little more or (♀) somewhat less than half as long as the body, thick, the third and fourth joints equal in both sexes and much shorter than the fifth; prothorax rather large, wider than the head, evidently shorter than wide, strongly constricted at apex, with an irregular and impunctate but otherwise unmodified median line, which does not attain the apex; scutellum closely nigro-pubescent; elytra oblong, parallel, three-fourths wider than the prothorax to nearly twice as wide, obtusely rounded at apex, the sutural angles right; abdomen minutely, sparsely punctulate, sometimes picescent. Length 8.8–11.0 mm.; width 3.5–4.3 mm. California (northern) ..... **viola** Lec.

Body narrower, much more elongate and smaller in size, less convex, shining, deep black, the elytra brighter, dark violaceous-blue, the vestiture similar; head more finely, very densely, the prothorax still more finely, toward the sides closely, dorsally rather loosely, punctate, the elytra punctured and with obscure dark pubescence nearly as in *viola;* antennæ longer, extending almost to apical third of the elytra (♂) or beyond the middle of the body (♀), thick, the joints as in *viola;* sides behind the eyes converging and nearly straight; prothorax as in the preceding; elytra twice as long as wide, parallel, gradually obtusely rounded at tip, the sutural angles right and sharp, three-fourths to four-fifths wider than the prothorax; abdomen piceous-black, the fine and very feeble punctulation and fine fuscous hairs rather closer than in *viola;* second joint of the hind tarsi shorter and much more strongly narrowed from apex to base than in that species. Length 8.7–10.0 mm.; width 2.9–3.7 mm. California (locality unrecorded) ..... **celestina** n. sp.

5—Elytral punctures sparser, separated basally by twice their own diameters or more 6

Elytral punctures distinctly dense throughout 15

6—Large species, more or less exceeding 10 mm. in average length 7

Smaller species, generally much under 10 mm. in length 8

7—Form robust, black, not at all densely clothed with long cinereous pubescence; head densely punctate, the prothorax moderately, the latter convex, constricted at apex, the sides before the middle abruptly rounded, parallel posteriorly, the surface obsoletely canaliculate; elytra subdepressed dorsally, the sides obliquely impressed, the apices subobliquely attenuate, then obtusely rounded, tinged with violaceous, less densely punctate, the punctures finer posteriorly; legs densely fusco-pubescent; antennæ fuscous, black at base. Length 14.2 mm. Oregon..... **mollipilosa** Lec.

Form stout, the elytra less flattened dorsally than in the preceding, with the sides less impressed behind the humeri and less broadly rounded at the elytral apex, black, pubescent; head densely punctate and canaliculate; prothorax densely punctate, the median line smooth posteriorly, shorter than wide, the sides anteriorly notably rounded, strongly margined, abruptly constricted and briefly tubulate at apex; elytra rather closely punctate, more finely posteriorly, parallel, obtuse at apex. Length 12.5 mm. California (Sacramento). [*fusca* Lec.—founded also upon a single specimen, taken in the same locality and by the same collector, is probably only the paler dimorphic form of *lugens*]..... **lugens** Lec.

Form stout, moderately convex, shining, deep black, the elytra with feeble greenish-metallic lustre; head very densely punctate, the sides feebly arcuato-convergent from the scarcely prominent eyes to the base; third and fourth antennal joints short, equal, barely more than twice as long as wide; prothorax wider than long, only moderately constricted at apex, moderately and arcuately swollen at the sides before the middle, evenly convex, with the very moderate punctures well separated and a smooth median line except anteriorly, the pubescence notably long, yellowish, very coarse and conspicuous; elytra parallel, conjointly very obtusely rounded at tip, three-fourths longer than wide, less than twice as wide as the prothorax, the punctures well separated, deep and perforate, rather coarse, becoming small but still strong apically, the hairs rather long, coarse, bristling and yellowish; abdomen finely and feebly but rather closely punctulate. Length 11.5 mm.; width 4.0 mm. California (San Francisco)..... **tumida** Lec.

8—Elytra black, with the feeblest possible trace of æneo-viridate lustre laterally, stout, somewhat grayish-black throughout, the pubescence everywhere unusually long, rather coarse, yellowish-cinereous and conspicuous, bristling and less dense on the elytra, unusually long on the abdomen; head finely but deeply, densely punctate, the sides behind the eyes very feebly converging to the base; antennæ thick, the equal third and fourth joints barely twice as long as wide; prothorax nearly as long as wide, the apex broadly and deeply constricted but only very moderately narrowed, the sides very broadly and feebly rounded, not prominent; surface finely, rather sparsely punctate, with a smooth median line behind the middle; elytra short, barely three-fourths longer than wide, strongly tapering from base to the rather narrowly rounded apex, scarcely one-half wider than the prothorax, the punctures notably coarse and sparse basally,

becoming unusually rapidly fine, feeble and close-set posteriorly; abdomen feebly but rather closely punctulate. Length (♀) 9.0 mm.; width 3.25 mm. Colorado.....**lanatula** n. sp.

Elytra with strong æneo-cupreous to pure green metallic lustre; third and fourth antennal joints short, subequal and about twice as long as wide throughout.....9

Elytra with pure deep greenish-blue to violaceous lustre, except in the pale dimorphic form.....13

9—Elytra strongly tapering from base to the rather narrowly rounded apex in both sexes, the habitus nearly as in certain species of *Donacia*, moderately stout, shining, the elytra æneo-viridate, the pubescence coarse but not dense, moderate on the elytra, longer and bristling anteriorly; head very densely punctate; antennæ thick, extending to apical third of the elytra (♂); prothorax but slightly shorter than wide, with moderate, deep and rather sparse punctures, strongly narrowed and broadly constricted at apex, the sides obtusely prominent before the middle, the smooth median line as usual; elytra one-half wider than the prothorax to less, rather more than three-fourths longer than wide, the deep punctures unusually coarse and widely separated, becoming smaller but strong and well separated apically; abdomen very feebly, sparsely punctulate and with moderate hairs. Length 8.5–9.5 mm.; width 2.9–3.4 mm. California (San Francisco).....**subænea** Lec.

Elytra parallel, generally so in both sexes so far as known.....10

10—Elytra cupreous to cupreo-violaceous in lustre, not at all greenish..11

Elytra metallic green or greenish in lustre.....12

11—Body very stout, moderately convex, shining, the pubescence only moderate in length but very coarse, bristling anteriorly; head finely, strongly, very densely punctate, with a subimpunctate and striate median line, the sides very feebly converging and nearly straight behind the scarcely prominent eyes; prothorax distinctly wider than long, relatively rather large, broadly constricted but only moderately narrowed at apex, the sides obtusely tumid before the middle, the punctures rather strong and close, becoming very dense laterally, with a smooth median line to slightly before the middle; elytra parallel, very broadly, obtusely rounded at apex, not quite twice as wide as the prothorax, only about three-fifths longer than wide, the perforate punctures not at all coarse but well separated, becoming fine though strong and still about as widely separated apically; one or two narrow impunctate lines are more or less evident except posteriorly; abdomen sparsely but rather strongly punctulate, with short darkish and unusually fine and inconspicuous hairs. Length (♀) 8.7 mm.; width 3.5 mm. California,—Levette.

corpulenta n. sp.

Body much narrower, smaller and less convex, the pubescence rather longer, coarse but sparse, bristling anteriorly; head with the punctures very fine, deep and, though very close, well defined and not confluent, the median line less punctate, broadly so anteriorly, the stria excessively fine and obsolescent; feebly converging sides very short behind the rather prominent eyes; prothorax much shorter

than wide, only very little narrowed and broadly, feebly constricted at apex, the sides only very slightly tumid before the middle; punctures fine and unevenly sparse, the smooth median line broad; elytra parallel, arcuately narrowing to the not very obtusely rounded apex in about apical third, three-fourths longer than wide, one-half wider than the prothorax, the punctures deep, everywhere equally and rather widely separated, moderately coarse basally, smaller but rather strong apically; abdomen minutely, rather sparsely punctulate and with short sparse and rather fine cinereous hairs. Length (♀) 7.2 mm.; width 2.6 mm. California (San Francisco).

francisca n. sp.

12—Form oblong, only moderately stout, convex, shining, the vestiture sparse but long, coarse and bristling; head with fine and close but distinct punctures, the median line more sparsely punctate; eyes only slightly prominent; antennæ thick, black as usual; prothorax distinctly shorter than wide, strongly, broadly constricted but only slightly narrowed at apex, slighly tumid at the sides before the middle, finely, loosely punctate, with the usual partial smooth line; elytra parallel, rounding behind only in about apical fourth, three-fourths longer than wide, fully twice as wide as the prothorax, rather coarsely, deeply punctate, more finely apically, the punctures everywhere subequally and rather widely separated; abdomen distinctly but not closely punctate. Length (♀) 8.5 mm.; width 2.9 mm. California (San Francisco),—Dunn..... **californica** Lec.

A—Slightly stouter and less elongate, with somewhat shorter vestiture, more prominent eyes, shorter and broader prothorax, with rather more sharply tumid sides before the middle and somewhat larger and closer punctures, the elytra (♀) barely two-thirds longer than wide and nearly similar in the male, likewise parallel and very obtusely rounded at tip, a little less than twice as wide as the prothorax (♀) but fully so (♂), the punctures not quite so coarse and rather less widely separated. Length (♂ ♀) 7.7–8.4 mm.; width 2.9–3.1 mm. California,—Levette..... **proxima** n. subsp.

Form similarly oblong but rather less convex and smaller in size, the vestiture coarse but notably sparse; head small, convex, with small but deep and slightly separated punctures, less punctate medially only toward the antennal line, the eyes moderately prominent; antennæ thick and short; prothorax relatively larger, fully a third wider than long, only moderately constricted and but slightly narrowed at apex, the ante-median tumors rather abrupt and strong; punctures small, sparse, irregularly distributed; elytra two-thirds longer than wide, three-fourths wider than the prothorax, parallel, gradually and arcuately narrowing in nearly apical two-fifths, the apex not very obtuse; punctures moderate, deep and perforate, separated by about twice their widths, becoming very fine and feeble apically; abdomen picescent, minutely and loosely punctulate, the fifth ventral longer than the fourth and rather narrowly rounded at tip in the type, which has the antennæ barely half as long as the body.

Length (♀) 6.8 mm.; width 2.5 mm. California (Siskiyou Co.),—Koebele..... **brevicornis** n. sp.

13—Antennæ longer, the third joint about three times as long as wide. Body larger, more shining, much less punctate anteriorly than usual, the vestiture short and sparse, moderately coarse on the elytra, longer, finer, fuscous and bristling on the prothorax; head polished and with rather small but deep punctures, separated by nearly twice their diameters, the eyes rather prominent; prothorax about as long as wide, very much narrowed and with an unusually deep constriction at apex, feebly, broadly and roundly tumid at the sides, the punctures fine, deep and sparse; elytra parallel, more than three-fourths longer than wide, not quite twice as wide as the prothorax, arcuately narrowing in not quite apical third to the transverse apex; punctures rather small but deep and perforate, everywhere well separated, becoming very fine and feeble apically; abdomen feebly and not unusually sparsely punctulate, the fifth ventral in the present assumed type short. Length (♀) 9.8 mm.; width 3.4 mm. California, (probably from the vicinity of San Francisco Bay).—Levette **subcyanea** Lec.

Antennæ shorter and relatively thicker as usual, the third and fourth joints about twice as long as wide; size smaller.....14

14—Form moderately stout (♀), or narrower and with the elytra strongly tapering (♂), strongly convex and shining; vestiture rather long, coarse and bristling, cinereous, darker, finer and more elongate-hispid on the prothorax as usual; head with rather small but strong and close-set but distinct punctures, the eyes moderately prominent; antennæ extending slightly behind the middle of the elytra (♂), a little shorter (♀); prothorax about as long as wide, moderately narrowed and constricted at apex, barely perceptibly and very broadly tumid at the sides before the middle, finely but deeply, sparsely punctate; elytra three times as long as the prothorax and one-half to two-thirds wider, arcuately narrowing in about apical third to the rather narrowly rounded apex, the punctures rather coarse, deep, well separated, smaller but still rather strong apically; color of the elytra throughout either intense blue-green, sometimes faintly violaceous, or pale red-brown; abdomen less shining, unusually densely punctulate. Length (♂♀) 5.8–8.0 mm.; width 2.25–2.9 mm. California (Trinity River in the Hoopa Valley, Humboldt Co.). Abundant..... **trinitatis** n. sp.

Form nearly similar but a little stouter and rather less convex and shining, the coarse bristling vestiture similarly cinereous on the elytra and under surface, but little darker anteriorly; head with moderate dense punctures, which are in mutual contact or very nearly, the eyes rather prominent; antennæ nearly as in the preceding; prothorax distinctly shorter than wide, moderately narrowed and deeply constricted at apex, the ante-median tumidity at the sides broad and feeble; punctures small but strong, moderately separated; scutellum densely cinereo-pubescent; elytra nearly as in *trinitatis* in both sexes though relatively a little shorter and broader, the punctures well separated but less coarse and, toward tip, becoming very fine and

feeble; color dark, with feeble suffused blue or violaceous lustre, the pale form not at hand; abdomen more sparsely punctulate, inconspicuously pubescent. Length (♂♀) 7.3–8.3 mm.; width 2.5–3.1 mm. California (Sta. Cruz Mts.),—Harford..... **cærulea** n. sp.

A—Similar to the preceding, except that the antennæ are a little longer; the prothorax is as long as wide, the vestiture throughout slightly longer and bright flavescent throughout on the elytra, legs and under surface, the scutellum densely flavo-pubescent, the elytral punctures more distinct apically and the abdominal punctulation somewhat denser; the legs and tarsi are longer. Length (♂) 8.2 mm.; width 2.8 mm. Locality identical... **chalybea** n. subsp.

15—Head subtumid basally, shining and not densely punctate. Rather narrowly parallel, not very convex, shining anteriorly, the elytra alutaceous, almost opaque posteriorly; pubescence long, coarse but nowhere dense; head moderate, finely punctate, the punctures distinct and separated, the broad and ill-defined median line impunctate; eyes not very prominent; antennæ short, thick; prothorax a third wider than long, but little narrowed at apex though broadly and strongly constricted, the sides before the middle roundly and gradually distinctly tumid; punctures very fine and sparse, the median smooth line irregular though subentire, the long coarse hairs yellowish like those of the elytra; scutellum not densely, obscurely pubescent; elytra obscure subcupreous, parallel, fully three-fourths longer than wide and three-fourths wider than the prothorax, feebly and arcuately narrowing behind to the rather obtusely rounded apex; punctures not coarse but deep, rather close-set, becoming distinctly asperulate and feeble, with the surface subrugose, apically; abdomen very minutely and feebly, sparsely punctulate. Length (♀) 6.2 mm.; width 2.6 mm. California (Calaveras Co.)..... **tumidiceps** n. sp.

Head nearly flat above, strongly, very densely punctate and dull; elytral punctures finer apically than basally but not asperulate, the surface not becoming duller in lustre 16

16—Last antennal joint (♂) unusually long, abruptly narrowed in nearly apical half and thence much narrower to the tip. Body not very stout, moderately convex and shining, the vestiture everywhere pale yellowish-cinereous, coarse, hispid and distinct, moderate in length; head moderate, the eyes rather well developed and prominent; antennæ (♂) thick, extending well behind the middle of the elytra; prothorax unusually elongate, fully as long as wide, barely wider than the head, considerably narrowed at apex and strongly constricted and margined, the ante-medial tumorosity at the sides very broad and barely evident, strongly convex, the punctures small, very deep, perforate and close-set but rather abruptly becoming very broadly sparse toward the middle, the narrow impunctate line extending almost to the constriction; scutellum closely, finely cinereo-pubescent; elytra obscure steel-blue, not quite three times as long as the prothorax and three-fourths wider, tapering from base to the rather broadly and obtusely rounded apex, the punctures deep, moderately coarse, separated by but little more than their diameters, finer apically; abdominal punctulation un-

usually dense, the fifth ventral in the male a little longer than the fourth but very broadly arcuate. Length (♂) 8.3 mm.; width 2.9 mm. California (Lake Co.),—Fuchs.....**protensicollis** n. sp.

Last antennal joint normal in both sexes, never more than faintly suggesting the structure observable in *protensicollis*.....17

17—Lateral tumorosity of the prothorax rather small and abrupt, distinct though obtuse and not strong. Body stout, rather convex and shining, black, the elytra and abdomen pale red-brown in the type, the legs piceous-black; pubescence everywhere coarse and pale yellowish, short on the elytra, long and conspicuous, though only moderately dense, on the head and prothorax; head and eyes moderate, the antennæ short and thick; prothorax distinctly shorter than wide, moderately narrowed and broadly constricted at apex, the punctures fine, close, sparser medially and with others larger sparsely intermingled, the impunctate line very gradually broadening basally; elytra scarcely two-thirds longer than wide, feebly tapering from the humeri, rather rapidly and arcuately narrowed in about apical third, the apex rather narrowly though obtusely rounded; punctures somewhat close-set and coarse though of unequal size basally, becoming finer but still very distinct apically; pale red-brown of the surface becoming nubilously and faintly blackish suturally, except basally, and also along the side margins in a broad vitta, uniting at apex with the median darker cloud; abdomen moderately punctulate. Length (♀) 9.0 mm.; width 3.3 mm. California (Gilroy Springs).....**robustula** n. sp.

Lateral swelling of the prothorax extremely broad and feeble, barely detectible.....18

18—Body moderately large, rather stout, convex, moderately shining, black, the elytra with feeble green metallic lustre, the abdomen black in the male, wholly ferruginous in the female; vestiture pale yellowish throughout, unusually long, coarse and conspicuous, rather dense on the head and prothorax, the former moderate, with but feebly prominent eyes; antennæ (♂) thick, extending barely at all behind the middle of the elytra, or (♀) similar but relatively shorter; prothorax relatively large, a little wider than long, distinctly wider than the head in both sexes, moderately narrowed and strongly, rather abruptly constricted apically, the punctures strong, slightly separated, the narrow smooth line not quite entire; elytra feebly tapering, nearly parallel in the female, obtusely rounded at apex, two-thirds to three-fourths longer than wide, one-half to two-thirds wider than the prothorax, the punctures not coarse but very deep, rather close-set throughout, smaller but distinct apically; abdomen rather densely punctulate, with conspicuous coarse pale pubescence. Length (♂♀) 9.2–10.2 mm.; width 3.2–4.0 mm. California,—Levette.....**hirsuta** n. sp.

Body much smaller and relatively much narrower than usual, the elytra strongly tapering and cuneiform, rather narrowly rounded at tip, black, the elytra moderately metallic green to sometimes partially cupreous; abdomen black, rather narrowly tapering, distinctly but not densely punctulate and with finer sparse cinereous hairs;

vestiture above cinereous, coarse, moderate in length on the elytra, more yellowish, long and silky, though not dense, and subdecumbent on the head and pronotum; head nearly as wide as the prothorax, with notably prominent eyes, the antennæ thick, nearly as in the preceding; prothorax nearly a fourth wider than long, rather strongly narrowed and deeply constricted at apex, unusually finely, rather sparsely punctured, the impunctate line in about basal half broad; scutellum densely yellowish-pubescent; elytra with rather small but deep, somewhat close-set punctures, becoming fine and closer apically. Length (♂) 6.6–7.5 mm.; width 2.2–2.8 mm. California,—Levette.....**lepidula** n. sp.

19—Form oblong-parallel, moderately convex and shining, black, the elytra somewhat piceous-black, generally faintly dark blue basally but sometimes pallescent and occasionally red-brown with a broad entire indefinite sutural vitta and another marginal and not attaining the base, the two uniting at the apex, the abdomen black to ferruginous, apparently in both sexes; pubescence coarse, yellowish, dense, darker, erect and less conspicuous anteriorly; head finely, very densely punctate, the eyes moderately prominent; antennæ moderately short and thick, a little more slender and ferruginous (♂), the third joint somewhat more than twice as long as wide; prothorax not quite as long as wide to distinctly transverse, only slightly narrowed but rather strongly constricted at apex, finely but deeply, sparsely punctate; elytra very rapidly and obtusely rounded at tip, the parallel sides broadly sinuate behind the humeri, twice as wide as the prothorax and between three and four times as long, rather coarsely and closely, very deeply punctate, more finely but distinctly behind, the surface generally with two partial and less punctate lines traceable; abdomen moderately punctulate, with unusually short and sparse pubescence; male with the fifth ventral no longer than the fourth, very broadly arcuate; female with this segment a little longer than the fourth and very evidently more narrowly rounded; body rather shorter in the former. Length (♂ ♀) 7.0–9.6 mm.; width 2.3–3.8 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.....**versicolor** n. sp.

Form very stout, the hind body somewhat as in *bivittata*, fusco-testaceous, pallidly pubescent; prothorax shorter than wide, the sides parallel posteriorly, rounded anteriorly, the apex narrowed and constricted, densely punctate, with a median smooth space, especially posteriorly; elytra broad, convex, sparsely punctate, more finely behind, toward base irregular, having indistinct smooth lines, giving the appearance of faint longitudinal stripes, of which the inner runs obliquely forward toward the humerus, so as to tend to unite with the others; antennæ and legs dark piceous, the former rather stout, with the third and fourth joints equal. Length 9.0 mm. California...**pinguis** Lec.

There can be but little doubt, so far as now apparent, of the distinctness of most of the forms above defined, though, on the whole, there is marked monotony; some, such as *subænea*, seem to

be very constant in color; others, such as *trinitatis*, are dimorphic in that respect, while some at least, such as *versicolor*, are very confusingly inconstant, not only in coloration but in size and somewhat in outline. *Pinguis* probably belongs to the same section as *versicolor*, but differs apparently in the denser thoracic punctures, as well as the shorter and broader elytra, those of *versicolor* being scarcely at all suggestive of *bivittata*. *Atra* and *morata* constitute a rather well defined subgeneric group. *Mollipilosa*, *lugens* and *pinguis* are defined above from the original diagnoses.

Leptacmæops n. gen.

This genus differs from the preceding very much in general habitus, due to the elongate form of the body and the long filiform antennæ. We have two subgeneric groups as follows:

Prothorax always distinctly constricted at apex; size moderate, the anterior parts never, the elytra frequently, paler in color..Group I
Prothorax not constricted at apex and pale in color, the elytra always black; size much smaller.....Group II

These groups are very unequal in extent, the second comprising but a single species at present.

Group I.

Subgenus **Leptacmæops** in sp.

Under this title are to be included a large number of species and subspecies, frequently rather closely allied among themselves and sometimes exhibiting a chromatic dimorphism, similar to that noted in *trinitatis* of the preceding genus; they are definable in a fairly satisfactory manner as follows:

Elytra distinctly modified at base by an abrupt coarseness or marked sparsity of the punctures, this area in the black forms usually bright red.....2
Elytra not modified in basal sculpture.....10
2—Prothorax very short before the ante-medial lateral prominences, which are feeble and rounded as usual.....3
Prothorax notably produced at apex, the constriction less abruptly formed, with its bottom broadly rounded in concavity.....8
3—Elytra always notably more than twice as long as wide; fifth antennal joint very much longer than the first.....4
Elytra barely more than twice as long as wide; antennæ shorter though similarly slender, the fifth joint not distinctly longer than the first; size very much smaller.....9

4—Prothorax stout, very much narrowed at apex.....5
Prothorax relatively narrower, less conical, only very moderately narrowed at apex.....6

5—Tempora much retracted and converging, shining and less punctate behind the eyes, which are notably prominent; vestiture moderate, the head and pronotum finely, sparsely and very inconspicuously pubescent (♂), or moderately closely and densely but much more conspicuously (♀). Female parallel, rather wide and but slightly convex, only feebly shining, the head and prothorax with rather small, very dense punctures, the elytra strongly, rather closely punctate behind the red basal region, which is posteriorly dilated at the sides as usual, the punctures becoming finer, denser and subrugulose apically; pubescence of the head shorter than that of the pronotum, on the latter deep golden in color, short, subdecumbent and yellowish-cinereous on the elytra; antennæ slender, pale throughout, extending to apical two-fifths of the elytra, the third joint as long as the fifth, a little longer than the fourth; elytra evidently less than twice as wide as the prothorax and barely four times as long, abruptly very obtuse at apex, the latter becoming transverse toward the slightly prominent sutural angles; under surface finely, closely punctulate and with short even cinereous hairs, the meso- and metasternal parapleura abruptly clothed with longer, dense and brilliant white pubescence. Length (♀) 9.5 mm.; width 2.7 mm. California (Sta. Cruz Mts.).....**basalis** Lec.

A—Nearly similar but much smaller in size, the antennæ (♂) extending to apical third of the elytra, or (♀) slightly behind the middle of the latter, which are black, with red base in less, or entirely pale and not darker even at apex in more, than half the examples, without intermediates in color, the antennæ piceous-black, with the two basal joints pale; thoracic vestiture almost wanting (♂), or rather long, coarse and condensed medially in two longitudinal areas as in *basalis*, though darker and more fulvous in color (♀); sculpture and general form similar, the elytra parallel (♀), narrower and distinctly tapering (♂); parapleura of the hind body similarly densely clothed with longer pubescence, which is however yellowish and not pure white. Length 6.8–8.2 mm.; width 1.9–2.5 mm. California (Sta. Barbara),—Dunn. Abundant.....**dichroma** n. subsp.

Tempora slightly shining though rather strongly punctate, much less retracted and nearly parallel behind the eyes, which are less prominent; body (♂) much larger, nearly similar to *basalis* in sculpture and color throughout, the elytra black, red at base; legs as in *dichroma*, the anterior red with black tarsi, the two posterior black, with the femora testaceous in basal three-fourths and half respectively; in the female of *basalis* similar, except that the entire hind legs are black; pubescence of the head and prothorax longer, coarser, denser and more conspicuous than in any of the preceding, yellow-fulvous in color, the median line of the pronotum in a deep valley between the lines of dense heaped-up vestiture; antennæ blackish, the two basal joints pale, slender, extending but little beyond the

middle of the elytra, the latter evenly tapering from base to apex, not more than one-half wider than the prothorax and fully four times as long, the sutural angles finely and minutely dentiform; under surface densely yellowish-pubescent. Length (♂) 10.5 mm.; width 3.0 mm. California (Sta. Barbara),—Dunn... **cuneata** n. sp.

Tempora nearly as in the preceding but more retracted because of the more prominent eyes; body stout, more convex than in any of the preceding, with nearly similar sculpture, black, the elytra pale tawny-yellow to slightly piceous, always with a black marginal streak behind the humeri, the apices constantly rather broadly margined with black; pubescence more developed than in any other species, very long dense coarse and golden-yellow to fulvous anteriorly, especially in the female, short and more cinereous on the elytra, the longitudinal thoracic heaps of pubescence less widely separated than in *cuneata*, the tempora differing in being also densely yellow-pubescent like the rest of the surface; pale basal area of the elytra less distinct because of the paler color, the elytra but feebly tapering in the male; under surface densely cinereo-pubescent, less so in the male, the parapleura conspicuously albido-pubescent; legs colored nearly as in *cuneata*. Length 8.0–10.0 mm.; width 2.5–3.0 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

auricollis n. sp.

6—Tempora finely, closely punctured, not or scarcely more shining than the rest of the surface. Body slender, moderately convex, black, the elytra pale yellow, tipped with black, the legs colored as in *basalis;* head and prothorax finely, densely punctate, the former with short and moderately close, the latter with barely longer and closer and almost uniformly distributed, dark yellow pubescence, not distinctly heaped up near the feebly depressed median line; tempora arcuately converging behind the distinctly prominent eyes; antennæ slender, black, the basal joint yellow, the third not quite so long as the fifth; prothorax rather longer than wide, strongly, subcylindrically convex, with a short broad impunctate spot behind the centre; elytra less than twice as wide as the prothorax, the punctures notably strong throughout, finer apically, rather coarse basally; under surface not densely cinereo-pubescent, the parapleura with dense white decumbent hairs as usual. Length 6.8 mm.; width 1.75 mm. California (Calaveras Co.—the locality unrecorded).

elegantula n. sp.

Tempora almost completely impunctate, highly polished and conspicuous 7

7—Form slender, rather convex, shining, deep black, the elytra with four small red spots at base, the legs black, the anterior femora and tibiæ and the middle femora basally red; antennæ rufo-piceous, the two basal joints entirely testaceous; punctures of the head and prothorax small, very dense on the former, distinctly separated on the latter, of the elytra rather small, deep and close-set, becoming rapidly sparse and coarse near the base; tempora moderately retracted, only feebly converging and then rounded to the base; antennæ slender, extending to apical fifth of the elytra, the third

joint unusually long, distinctly longer than the fifth, the second one-half longer than wide; prothorax longer than wide, deeply constricted at apex, broadly rounded and feebly swollen at the sides to the basal constriction, between which and the middle the median line is broadly impunctate; pubescence very short, sparse and inconspicuous; elytra feebly tapering from the base, obtusely rounded conjointly at tip, one-half wider than the prothorax and less than four times as long, the hairs very short, rather coarse, sparse and cinereous; under surface with rather long sparse and decumbent cinereous hairs, dense and slightly yellowish on the parapleura. Length (♂) 8.5 mm.; width 2.2 mm. California (Sta. Cruz Mts.)—Harford.....**quadrinotata** n. sp.

Form still more slender, similar to the preceding, except that the posterior angle of the tempora is more acute and prominent, the antennæ deeper black, with only the basal joint testaceous though black on its inner face, very nearly as long as the body, the third joint much shorter, being distinctly shorter than the fifth, the second but little longer than wide, the prothorax narrower, rather more sharply swollen at the sides, and only near to slightly before the middle, the impunctate line attaining the base, the pubescence similarly feeble and very sparse throughout; elytra entirely black, not at all red at base and with the distal punctures finer, closer and more asperulate, the apex similarly obtusely subtruncate; dense vestiture of the parapleura of the hind body pure white. Length (♂) 7.0 mm.; width 1.8 mm. California,—Levette.....**tenuis** n. sp.

8—Rather slender and but very moderately convex, grayish-black throughout, with the elytra constantly red at base, or, wholly pale yellow-brown; legs as in *quadrinotota*, except that the hind femora are slightly rufous at base; head throughout as in that species, the tempora similarly very shining and the pubescence short and inconspicuous; antennæ piceo-rufous, the two basal joints testaceous, long and slender; prothorax elongate, tumidulously swollen at the sides before the middle, convex, finely, densely punctate, the pubescence very short, sparse and inconspicuous throughout (♂), slightly denser (♀); apical margin more arcuate than usual; elytra as in *quadrinotata*, except in basal coloration, the under surface similar; fifth ventral (♂) longer than the fourth and strongly rounded as usual, the apex narrowly and feebly sinuate and the surface apically feebly impressed. Length (♂ ♀) 6.8–9.0 mm.; width 1.85–2.2 mm. California (Lake Co.),—Fuchs.

temporalis n. sp.

9—Female rather slender, moderately convex, shining, black, the elytra wholly pale brownish-yellow in the type; head very densely punctate and feebly pubescent, the retracted tempora rapidly converging behind the eyes, shining and sparsely punctate but only on the flanks, not shining from above, the antennæ attaining the middle of the elytra, colored as in *tenuis;* prothorax barely at all longer than wide, narrow, the sides broadly and feebly rounded between the constrictions, the punctures relatively coarser than usual and slightly separated, the pubescence short, sparse and wholly incon-

spicuous; scutellum narrow, pointed, black; elytra rather strongly punctate, almost impunctate at base, the punctures very fine, feeble and rather sparse apically; legs black, variegated with testaceous as in *basalis;* fifth ventral (♀) not longer than the fourth and very broadly arcuate at apex. Length (♀) 5.2 mm.; width 1.5 mm. California,—Levette..... **minima** n. sp.

10—Form more convex, the integuments thick, intense black throughout, strongly sculptured and almost glabrous; apical constriction of the prothorax feeble.....11

Form more elongate and less convex, with thinner integument.....12

11—Body moderately stout, convex, densely black throughout, the anterior legs, excepting the tarsi, and the other legs black, the femora rufescent at base; head well developed, parallel, rather transverse, very densely punctate and opaque throughout, the tempora barely at all less prominent than the eyes, straight and parallel for some distance behind them, then rounded to the broad neck; antennæ inserted as usual in the genus, slender, rufo-piceous throughout, as long as the body in the male, the fourth joint slightly shorter than the third, the fifth distinctly longer; eyes rather small, minutely faceted and entire, only moderately prominent; prothorax barely at all wider than the head, slightly transverse, distinctly narrower at apex than at base, prominently rounded at the sides medially, biconstricted, strongly and densely punctate, with a narrow smooth polished and unimpressed median line almost to the apex, the pubescence very inconspicuous, minute; elytra rather more than twice as long as wide, one-half wider than the prothorax, evenly tapering from base to the conjointly evenly rounded apex, the sutural angles rounded; punctures coarse, deep, slightly less coarse apically, separated by two to three times their diameters, the hairs minute and scarcely visible; legs slender. Length (♂) 9.0 mm.; width 2.8 mm. California (Sta. Cruz Co.). A female from Nevada is stouter, with relatively smaller anterior parts and broader and perfectly parallel, more coarsely sculptured elytra, less prominent tempora, smaller and more angulate lateral prominences of the prothorax and shorter antennæ; it may be conspecific. [*Leptura cubitalis* Lec.]..... **cubitalis** Lec.

Body less stout, similarly colored throughout and with generally similar sculpture, but with much longer and more evident pubescence and less elongate male antennæ, these being more testaceous, not quite as long as the body and with much less elongate joints; head differing in having the tempora very much less prominent than the relatively larger and more convex eyes, converging and prominently rounding to the narrower neck; prothorax nearly similar in form and sculpture but less coarsely punctate and with the coarse recumbent pale hairs much more conspicuous; elytra narrower, less than one-half wider than the prothorax, two and one-half times as long as wide, still more coarsely and less sparsely punctate, the hairs, though very short, decidedly more distinct than in *cubitalis.* Length (♂) 7.0–8.2 mm.; width 1.9–2.4 mm. California (San Diego). [*Acmæops variipes* Csy.]..... **variipes** Csy.

12—Prothorax never longer, and generally distinctly shorter than wide; elytra usually uniform in color, deep black as a rule.....13

Prothorax always somewhat longer than wide; elytra vittate.....20

13—Basal angles of the prothorax small and, though acute, never prolonged beyond the longitudinal line limiting the median arcuation of the sides.....14

Basal angles very acute and laterally prolonged beyond the line of the median arcuation, the prothorax more narrowed from base to apex, or more campanulate.....15

14—Color black throughout the body, legs and antennæ, except the humeral angles of the elytra, which are red; pubescence ashy, rather long and moderately close, partially erect, shorter, coarser and sparser on the elytra, though conspicuous; head and prothorax very densely punctate and dull, the former subquadrate, the tempora but little less prominent than the eyes, parallel for a short distance, then strongly rounding; antennæ slender, nearly as long as the body in the male; prothorax barely wider than long, not conspicuously narrowed at apex, rounded at the sides medially, the constrictions evident but not deep; smooth median line virtually obliterated, finely striiform submedially; elytra two-fifths wider than the prothorax, rapidly tapering, rather more than twice as long as wide, rounding at apex, with obtuse sutural angles, the punctures rather coarse, unusually close, becoming dense suturad, the sutural bead not more densely pubescent; abdomen finely, rather closely punctate and loosely clothed with long hairs, the fifth segment (♂) narrowly sinuato-truncate at apex and with the surface impressed medially toward tip. Length (♂) 8.5 mm.; width 2.8 mm. Oregon. [*Acmæops militaris* Lec.].....**militaris** Lec.

Color deep black throughout, with the anterior tibiæ and tarsi alone paler and obscure testaceous, the entire elytra, legs and antennæ throughout occasionally pale ochreo-testaceous, at least in the male, the abdomen always black, sometimes pale at the extreme tip; head and prothorax densely punctate but less so and less dull than in the preceding species, the elytral punctures much coarser and more widely separated, becoming more rapidly and decidedly smaller from base to apex; head in both sexes with more prominent eyes and more obliquely rounding, much less prominent tempora than in *militaris;* prothorax more decidedly transverse and with relatively more narrowed apex and deeper constrictions; elytra nearly similar in form, rapidly tapering throughout in the male, or just visibly in the female; elytral suture not more densely pubescent; pubescence long, abundant, erect and bristling on the head and prothorax, sparser, less elongate and more reclining on the elytra, becoming bristling and erect only toward base. Length (♂♀) 9.0–10.0 mm.; width 2.8–3.1 mm. Washington State to Montana (Helena—W. M. Mann) and Wyoming (Yellowstone Park). [*Acmæops subpilosa* Lec.].

subpilosa Lec.

15—Sutural bead of the elytra conspicuously and densely albido-pubescent, the hairs elsewhere very small, fine and inconspicuous, longer at apex and the side margins. Body only moderately slender,

the elytra very moderately cuneiform, black throughout, the tarsi sometimes piceous, the anterior tibiæ and tarsi and the antennæ testaceous, the basal joint of the latter infuscate; head and prothorax strongly and densely punctate, only slightly shining and bristling with pale fulvous erect or suberect hairs, the former with prominent eyes and much less prominent tempora, which are parallel (♂) to oblique (♀); antennæ long and slender, four-fifths as long as the body in the male, not differing much sexually; prothorax distinctly transverse, the apex much narrowed and with deep constriction, the narrow smooth median line obliterated before the middle; basal angles but very moderately prolonged transversely; elytra nearly as in the preceding but with the rather coarse punctures very widely spaced, being separated by three to five times their own diameters, becoming but slightly smaller apically but notably smaller and closer on the basal swelling near the scutellum; surface strongly shining; abdomen rather finely, closely punctate and with moderate hairs; legs rather long, slender. Length (♂♀) 10.5–11.0 mm.; width 3.5 mm. Washington State..... **nitidipennis** n. sp.

Sutural bead not clothed differently from the general surface, the pubescence of which is rather short, reclined, coarse, pale and distinct. 16

16—Tempora but very little less prominent than the eyes, which are not very convex or prominent. Body deep black throughout, the legs picescent distally, the anterior tibiæ and tarsi testaceous; antennæ rufo-piceous, with the basal joint black anteriorly, pale posteriorly, slender, two-thirds as long as the body in the female; head and prothorax extremely densely but not very finely punctate and slightly shining, the former subquadrate, the tempora feebly oblique behind the eyes (♀); prothorax but slightly transverse, strongly narrowed at apex and distinctly bi-impressed, the sides arcuate between the constrictions; surface somewhat swollen at each side of the median line, which is smooth in the type only in a small dash just behind the middle; pubescence denuded in the type; elytra much wider than the prothorax, moderately cuneiform, more than twice as long as wide, the punctures moderately coarse, close-set, the surface transversely subrugose by anteriorly oblique light; abdomen minutely, feebly, rather closely punctulate, shining. Length (♀) 9.5 mm.; width 2.9 mm. Unlabeled in Levette collection . . **intermedia** n. sp.

Tempora in both sexes much less prominent than the eyes, which are more prominent and strongly convex; body and legs colored as in *intermedia*..... 17

17—Tempora oblique and nearly straight behind the eyes, apparently in both sexes..... 18

Tempora parallel and straight for a rather long distance behind the eyes, at least in the male..... 19

18—Body nearly as in the preceding but larger and with longer pubescence; head relatively smaller, densely punctate, the tempora converging and very short behind the eyes, then very broadly arcuate, then sinuate to the neck, which is much narrower; antennæ (♀) nearly similar; prothorax still more transverse and strongly campanulate, much wider than the head, the basal angles unusually prolonged

laterally and the apex relatively narrower; pubescence conspicuously condensed along each side of the middle, coarse and yellowish, the erect hairs numerous; punctures dense, the constrictions very distinct; elytra less cuneiform, broader, with moderate and unusually closely placed punctures, the surface not rugulose transversely; pubescence denser than usual, coarse, reclined, yellowish-cinereous, longer, more erect and bristling toward base; abdomen finely punctulate, with distinct inclined ashy pubescence; legs very slender; basal joint of the hind tarsi two-fifths of the whole. Length (♀) 11.0 mm.; width 3.5 mm. Unlabeled in Levette collection—probably Oregon. [*Acmæops lupina* Lec.].....**lupina** Lec.

Body nearly as in *intermedia* but smaller and with sparser and coarser sculpture; pubescence yellowish-cinereous, erect and bristling on the anterior parts but evenly distributed and not dense, unusually short, depressed, coarse and rather sparse though distinct on the elytra; head scarcely narrower than the prothorax in either sex, densely and rather coarsely but shallowly punctate, the tempora converging and somewhat arcuate for a longer distance behind the eyes, then much more abruptly narrowed to the neck, which is nearly as in *lupina* and narrower than in *intermedia;* prothorax throughout nearly as in the latter species; elytra smaller, being narrower and shorter, similar otherwise, except that the punctures are much coarser, deep and separated by rather more than their own diameters; abdomen black throughout, finely, rather sparsely punctulate. Length (♂♀) 8.8–9.0 mm.; width 2.7 mm. Washington State.
pugetana n. sp.

19—Moderately slender, convex, grayish-black, the abdomen more or less rufescent posteriorly, the legs as usual in this group; pubescence decidedly yellow, less so and shorter, decumbent and not dense on the elytra, unusually long, coarse, reclined, close and conspicuous on the head and prothorax, which are very densely punctate and dull, the former not differing much sexually, subquadrate, with unusually convex eyes, which are much more prominent than the parallel tempora, the latter broadly rounding posteriorly to the neck; antennæ (♂) three-fourths as long as the body, slender, piceous-black; prothorax wider than long, much more so in the female, moderately narrowed and well constricted at apex, the acute basal angles only moderately produced laterally; elytra as in the preceding species, cuneiform and slightly more elongate (♂), subparallel (♀), strongly and closely punctate, the punctures less coarse and denser posteriorly; abdomen minutely, sparsely punctulate and shining as usual in the preceding species, the fifth segment (♂) broadly and feebly concave from the apex beyond the middle. Length (♂♀) 9.5–10.0 mm.; width 2.8–3.0 mm. Utah.....**quadriceps** n. sp.

20—Abdomen dull, very densely and finely punctate and closely pubescent. Body (♀) rather larger than usual, black, the legs as in the preceding species of this subgenus, the elytra pale testaceous, a sutural, marginal and very faint discal vitta infuscate; pubescence short, sparse and inconspicuous, minute on the elytra; head densely punctate and dull, the eyes moderate or rather small, the

tempora feebly oblique and arcuate behind them and barely less prominent; antennæ (♀) slender, dusky-testaceous, three-fourths as long as the body; prothorax much larger than the head, barely at all longer than wide, much narrowed and strongly, obtusely constricted at apex, the sides notably and subangularly prominent just before the middle; surface strongly, densely punctate, less closely medially, distinctly swollen at each side of the middle, especially before the basal constriction; elytra large, two and one-half times as long as the head and prothorax, four-fifths wider than the latter, feebly cuneiform, the apices subtruncate but without external angulation, the punctures deeply impressed, widely separated, very coarse basally, becoming remarkably fine apically. Male much smaller and more slender than the female, the thoracic and abdominal punctures smaller and not so dense. Length (♀ ♂) 10.3–11.7 mm. width 2.75–3.8. mm. Colorado—Levette and New Mexico (Sandia Mts.),—Wirt Robinson ..... **punctiventris** n. sp.

Abdomen shining, finely, feebly and not densely punctulate, not densely pubescent 21

21—Head quadrate, the straight parallel tempora scarcely at all less prominent than the eyes, rounding rather abruptly at base to the neck, very densely punctate. Body more slender, black, the anterior versicolored legs as usual, the elytra dusky, with a pale discal vitta on each, becoming obsolete posteriorly, and another, narrower, feebler and more apical and external; vestiture throughout very short, sparse and inconspicuous; head fully as wide as the prothorax, slightly transverse, the antennæ (♂) slender, four-fifths as long as the body, testaceous, with the basal joint dusky; prothorax slightly elongate, the rounded apex moderately narrowed and broadly constricted, the sides rather prominent but obtuse medially; surface nearly as in the preceding, shining but with the strong punctures close throughout, excepting the smooth narrow median line; elytra cuneiform, three-fifths wider than the prothorax, not quite twice as long as the head and prothorax, the punctures nearly similar but less coarse and more perforate; abdomen deep black throughout, the fifth segment (♂) with a small apical concavity. Length (♂) 10.5 mm.; width 3.0 mm. Colorado. [*Leptura longicornis* Kirby]. **longicornis** Kirby

Head much smaller, the tempora obliquely and broadly arcuate from the eyes to the neck, the eyes relatively more prominent though moderate in size 22

22—Body slender (♂), or rather stout, with parallel elytra (♀), colored and clothed as in *longicornis*, the pale vittæ of the elytra variable in extent and similarly nubilous; head nearly similar in the sexes, though relatively smaller in the female, densely punctate; antennæ very slender, almost as long as the body (♂), distinctly shorter (♀); prothorax nearly as in the preceding but smaller and barely as long as wide, the swelling of the surface at each side of the middle obsolescent, the punctures throughout rather well separated, denser in the female; elytra cuneiform (♂) or parallel (♀), the punctures nearly as in *punctiventris* but relatively less minute apically; fifth

ventral (♂) not impressed apically. Length (♂ ♀) 9.5–10.3 mm.; width 2.4–3.1 mm. Colorado. Levette collection. [*Acmæops ligata* Lec.]. . . . . **ligata** Lec.

Body nearly as in the preceding in outline but smaller and with less abbreviated and much more evident pubescence above, and especially on the abdomen, where it is closer though not dense as it is in *punctiventris;* head and prothorax in form and sculpture nearly as in *ligata*, the tempora still more oblique and the eyes somewhat more prominent; antennæ (♀) pale in color throughout, slightly shorter than in the preceding; elytra very pale flavo-testaceous, a rather abrupt narrow common sutural vitta black, the apices similarly narrowly truncate, with broadly rounded external and sharply defined sutural angles, the punctures similar, though relatively finer apically; legs very pale testaceous throughout in the type, the under surface wholly deep black. Length (♀) 8.4 mm.; width 2.75 mm. Colorado (Veta Pass),—Schwarz. . . . . **alticola** n. sp.

The species described by LeConte under the name *Acmæops vincta*, I have not seen; it is entirely similar to *ligata*, according to the descriptions, but with denser thoracic sculpture. *Dorsalis* Lec., is also unknown to me; it is united with *subpilosa* by LeConte (Sm. Misc. Coll., 264, p. 209) but I suspect erroneously, as the author also united *lupina* with *subpilosa* at the same time, these species being amply different and not at all synonymous. *Marginalis* Lec., may be a true synonym of *longicornis*, as stated (l. c.), since the extent of the pale vittation of the elytra is variable to some extent, as noted above under *ligata*. *Leptura spuria* Lec., also belongs to this subgenus of *Leptacmæops*, but I have no example before me at present; it seems closely allied to *subpilosa*, but is not the same as *militaris* as stated by G. H. Horn. In *punctiventris* there is frequently only the black sutural vitta, extending from base virtually to the apex, where it is much narrowed.

The locality Sta. Cruz Co., given under the original description of *variipes* (Ann. N. Y. Acad., VI, p. 38) was taken from a specimen of the series bearing this definite label; others had simply "Cal" as a label, one of which, the type, I find had a minute label concealed by the other and bearing the initials "S. D." *Variipes* may be a simple variety of *cubitalis*, but closer observation seems to show that it is probably a distinct, though very closely allied species.

Group II.

Subgenus **Acmæopsilla** nov.

A single very small and slender species of peculiar and extremely constant coloration, alone constitutes this subgenus of *Leptacmæops* as follows:

Body narrow and convex, alutaceous in lustre, black, the head before the antennæ, the prothorax and occasionally the tip of the abdomen red; legs black throughout; pubescence anteriorly extremely minute, sparse and scarcely visible, longer, pale and more distinct on the elytra and abdomen, close on the latter; head very densely punctate, with well developed and very convex eyes, the tempora much less prominent, parallel, then rounding to the base, polished and punctureless as in the *basalis* group; antennæ slender, piceous-black, fully as long as the body; prothorax slightly elongate, narrower than the head, much narrower at apex than at base, broadly rounded at the sides, without trace of apical constriction, the basal broadly impressed and distinct; punctures very fine, sparse, the surface evenly and strongly convex throughout; elytra one-half wider than the prothorax and more than three times as long, feebly cuneiform, rounded at apex, the punctures close-set, rather strong basally, fine apically; legs very slender. Length (♂ ♀) 5.7–6.5 mm.; width 1.7–1.8 mm. California (San Diego). [*Acmæops falsa* Lec.] **falsa** Lec.

Sexual differences seem to be very slight, the elytra of the male being somewhat more cuneate and narrowly, individually rounded at apex; in the female they are obliquely subtruncate.

Acmæops Lec.

The type of this genus as intended by LeConte (Agassiz L. Sup. 235), is either *Pachyta discoidea* Hald., or *Leptura proteus* Kirby, those species of his Division A being rather *Gaurotes* than *Acmæops*, as before stated and typified by *Pacyhta thoracica* Hald. *Acmæops*, as here limited, includes small species with moderately elongate, slender antennæ and very diversified prothorax, this part in *directa* being almost a counterpart of that characterizing *falsa* of the preceding genus, but in all cases the more extended genæ and epistoma produce a narrowed and elongate form of the head before the eyes, which is quite different from anything known in *Leptacmæops* and remindful of *Ophistomis*, especially in the extreme form developed in the holsubarctic *pratensis*. The various groups and specific forms can be noted in the following table:

Prothorax evenly and strongly convex, the apex with an elevated and acute marginal bead, behind which there is only an extremely short and feeble constriction; neck unusually narrowed and elongate; elytra conjointly rounded at tip.....2

Prothorax almost evenly convex but with the apex broadly and deeply constricted; neck shorter and not so narrowed; elytra narrowly truncate at tip.....3

Prothorax tumid laterally on the disk just before the broad basal constriction, the apical constriction distinct, the subbasal tumidities sometimes feeble, but in *discoidea* becoming almost spiniform; neck as in the preceding group; elytra narrowly truncate to sinuate at tip.....4

2—Body moderately stout, shining, pale rufo-testaceous throughout, the apical part of the antennal joints and three vittæ, sharply defined on each elytron, sutural, marginal and discal, the marginal inwardly dilated near the middle, black; pubescence short, sparse, pale and inconspicuous; head and prothorax very finely, sparsely punctate, the eyes well developed, convex and prominent, the sides behind them strongly oblique and nearly straight to the narrowed neck; antennæ very slender, as long as the body; prothorax very slightly elongate, evidently wider than the head, evenly and almost globularly convex, the apex transversely truncate, two-thirds as wide as the base, the sides subprominently rounded just before the middle, the basal angles sharp but not projecting beyond the line of the median prominences; elytra a little less than twice as wide as the prothorax and between three and four times as long, subparallel in both sexes, the punctures very coarse, deep, less coarse toward apex, separated by less than their own diameters; abdomen very minutely, feebly and sparsely punctulate, shining and with very short, sparse and inconspicuous hairs; legs very slender. Length (♂ ♀) 6.5–7.5 mm.; width 1.8–2.2 mm. Pennsylvania and Indiana.....**directa** Newm.

3—Form stout; surface shining, black throughout, the legs and antennæ black, the elytra pale tawny-flavate, with a nubilous black streak from the humeri obsolescent behind the middle, the apices and suture black, the black areas sometimes wholly wanting and the elytra occasionally wholly piceous; pubescence short, moderately abundant, pale and distinct; head nearly as in the preceding, being small and rapidly oblique at the sides behind the prominent eyes, but closely and strongly punctate; antennæ much less slender and shorter, three-fourths (♂) to three-fifths (♀) as long as the body; prothorax large, very much wider than the head, strongly narrowed at the arcuate and conspicuously constricted apex and deeply, moderately closely punctate, shining; elytra shorter than in any other species, scarcely twice as long as wide, one-half wider than the prothorax, feebly cuneiform, the punctures moderate in size, rather close-set; abdomen shining, finely, sparsely punctulate; legs very slender. Length (♂ ♀) 5.2–8.0 mm.; width 2.0–2.8 mm. Colorado, Montana, California, Hudson Bay Territory and Siberia.....**pratensis** Laich.

4—Elytra uniform in color, black or pale, subvittate or nubilously maculate 5

Elytra uniformly black, margined abruptly at base, apex, externally and more narrowly along the suture, with brick-red, the coloration notably constant 12

5—Prothorax less developed and more convex, the subbasal prominences moderate, less widely separated and merely convex 6

Prothorax relatively larger, the prominences more acutely elevated, more widely separated and with the intervening concavity always more densely punctate and pubescent, these thoracic characters, as in the preceding group, asexual in development 11

6—Head subquadrate, the tempora much less prominent than the eyes but parallel and straight behind them for a considerable distance, then rather abruptly rounding to the broad neck. Body deep black, the legs testaceous, black at the apices of all the femora and tibiæ, the tarsi, entire abdomen and antennæ basally deep black; elytra testaceous, with a broad common sutural stripe, vanishing before the apex, and a feeble nubilous submarginal streak, not attaining base or apex, black or infuscate; pubescence very short, coarse, pale and sparse; head finely, loosely punctate, broadly impressed at each side of the front; antennæ (♀) slender, piceous distally, barely more than half as long as the body; prothorax as long as wide, narrowed and strongly constricted at apex, slightly wider than the head, the sides broadly arcuate; surface finely but deeply, sparsely punctate, with an impunctate median line, alutaceous in lustre like the head; elytra one-half wider than the prothorax and nearly four times as long, just visibly cuneiform, rounding apically, the sharply defined truncatures sinuate; abdomen rather closely but very finely punctulate; legs slender. Length (♀) 8.8 mm.; width 2.8 mm. Colorado (Boulder Co.),—F. Y. Parker . . . . . **parkeri** n. sp.

Head suboval, with similarly very prominent eyes, behind which the much less prominent tempora rapidly and somewhat arcuately converge to the relatively narrower neck 7

7—Thoracic prominences somewhat more widely separated, the elytral punctures remarkably fine, sparse; sinus at the apex of the fifth male ventral less abrupt and rather shallow. Body black, shining, the tibiæ and tarsal joints testaceous, blackish at the tips, the femora black, rufous at base; head finely but deeply, somewhat sparsely punctate, the antennæ (♂) three-fourths as long as the body, pale piceo-testaceous, black basally; prothorax barely as wide as the head, moderately narrowed and constricted at apex, the punctures rather small but perforate, sparse, irregular in distribution; elytra but little more than twice as long as wide, three-fourths wider than the prothorax, very moderately cuneiform, the truncatures transverse; color piceous-black, nubilously testaceous discally toward base, at apex and along the marginal bead; punctures becoming larger internally toward base as usual. Length (♂) 7.4 mm.; width 2.4 mm. Lake Superior . . . . . **lacustrina** n. sp.

Thoracic prominences a little less widely separated; elytral punctures

stronger, except in *obsoleta*, the apical abdominal sinus of the male more abruptly formed and distinctly deeper.....8

8—Elytral punctures moderate, becoming fine, feeble, asperulate and unusually close-set toward apex. Body and elytra black throughout; legs pale testaceous, the tarsi piceous distally, the femora black at tip; head unusually small, very finely, sparsely punctate throughout; antennæ missing in the type; prothorax moderate, scarcely as long as wide, a little wider than the head, strongly narrowed and abruptly deeply constricted at apex, the prominences almost completely obsolete, the surface between them not at all concave, finely, sparsely punctate, with the usual impunctate line; elytra subparallel, one-half wider than the prothorax and four times as long, rounding apically, the truncatures transverse; abdomen very finely, rather closely punctulate. Length (♀) 7.8 mm.; width 2.6 mm. Colorado. Levette collection.....**obsoleta** n. sp.

Elytral punctures less close-set and not or very feebly asperate toward tip.....9

9—Punctures of the head coarse, deep and very close-set except medially. Body rather stout, shining and deep black throughout, the legs, elytra and antennæ wholly black; pubescence sparse, fulvescent, less abbreviated than usual and, on the prothorax, rather long and very obvious; head in outline as in the two preceding, the antennæ (♂) slender, nearly four-fifths as long as the body; prothorax fully as long as wide, much narrowed and deeply constricted at apex, very finely and sparsely punctate, the prominences feeble, the surface not concave between them; elytra barely one-half wider than the prothorax and between three and four times as long, moderately cuneiform, the apical truncatures straight, slightly oblique; punctures moderate in size, deep, subperforate, not at all asperate posteriorly and everywhere unusually close-set, becoming dense and separated by their own diameters, to but little more, on the flanks; abdomen finely, loosely punctulate. Length (♂) 7.5 mm.; width 2.5 mm. Colorado. Levette collection.....**puncticeps** n. sp.

Punctures of the head fine and more or less sparse throughout; thoracic prominences less feeble, the intervening surface just visibly concave.....10

10—Head and prothorax of equal width, the latter narrower than usual and longer than wide; color black throughout the body, legs and antennæ, the elytra piceous-black, testaceous at base, the pale area descending discally and marginally, the vittæ gradually narrowing and becoming obsolete near the middle, the apices also pale; head finely punctate, the punctures well separated but not very sparse; antennæ (♂) four-fifths as long as the body; prothorax much narrowed and strongly constricted at apex, the punctures fine, very sparse, less sparse basally; surface alutaceous, the hairs rather short and fine, inconspicuous; elytra highly polished, formed as in *lacustrina* but with unusually coarse and impressed punctures, fine but not asperate distally and everywhere sparse; abdomen finely, sparsely punctulate. Length (♂) 7.0 mm.; width 2.4 mm. Colo-

rado (Boulder Co.). Collected at Magnolia by Mrs. T. L. Casey.

aurora n. sp.

Head narrower than the prothorax in both sexes; body deep black throughout, the legs (♂) deep black, all the femora abruptly bright red in basal third to half, or (♀) dusky testaceous, the tibiæ and tarsal joints black at apex, the femora black apically; pubescence very short, pale and coarse, sparse throughout; head finely, sparsely punctate throughout, the occiput sloping upon the neck as usual, the antennæ (♂) slender, wholly black and nearly four-fifths as long as the body, or (♀) scarcely more than half as long as the body, dusky-testaceous, black at base; prothorax in general outline nearly as in the preceding, as long as wide, minutely, sparsely punctate, not more closely basally (♂), or rather less sparsely and more coarsely (♀); elytra nearly similarly and moderately cuneiform in both sexes, narrower in the male, the apical truncatures straight to feebly sinuate; punctures notably fine, barely more than half as distant as in the preceding and much finer throughout, though, as usual, becoming larger basally and especially toward the suture; legs and abdomen as usual; basal joint of the hind tarsi not quite as long as the remainder. Length (♂♀) 7.5–9.5 mm.; width 2.3–3.2 mm. Colorado (Boulder Co.—Magnolia, and Fraser,—C. A. Frost).

coloradensis n. sp.

1—Body sexually almost similar and moderately stout, a little less stout in the male, the elytra almost similarly and moderately tapering in both sexes, black, the elytra (♂) black, with the marginal bead rufous and with the legs rufo-piceous, the femora black, rufous basally, nearly similar in the female, the latter, however, with the elytra blackish-subæneous, with a discal testaceous vitta, which is very broadly interrupted medially, the lateral bead, broadening apically and basally, also testaceous; pubescence very short throughout, coarser and paler on the elytra as usual; head small, rather finely but deeply and closely punctate throughout, the tempora obliquely arcuate to the neck, much less prominent than the very convex eyes; antennæ peculiar, slender as usual but unusually short in both sexes and apparently a little longer in the female, one-half to three-fifths as long as the body, piceous-black basally; prothorax much wider than the head, as long as wide, much narrowed and constricted at apex, not very finely punctate, the punctures close-set and with the usual smooth line (♂), or finer and sparser (♀); smooth median line striate along the middle; prominences widely separated and subacutely prominent; elytra truncate at tip, finely, not at all closely punctate, the punctures a little larger basally; last ventral slightly truncate at apex in the male, rounded in the female. Length (♂♀) 8.0–8.5 mm.; width 2.8–3.0 mm. Maine (Paris and Monmouth),—C. A. Frost.....**cavicollis** n. sp.

Body nearly as in the preceding but larger and stouter and with the female elytra not cuneiform but parallel; color black, the elytra pale testaceous, with a narrow nubilous black sutural vitta and a feeble longitudinal cloud at the summit of the flanks near the base, the legs long, slender, testaceous, the tarsi piceous, the femora black

apically; pubescence short but closer and more conspicuous than in the preceding; head nearly similar but less closely punctate, the antennæ nearly three-fifths as long as the body, slender, testaceous, the basal joints black on their anterior sides; prothorax nearly as in *cavicollis* but with the punctures (♀) much larger, perforate and decidedly dense, the pubescence paler, closer and more conspicuous; elytra differing decidedly in being parallel and more strongly, as well as much more closely, punctate, as well as being almost similarly sculptured throughout, the punctures scarcely at all larger or sparser basally; legs notably longer, similarly very slender. Length (♀) 9.0 mm.; width 3.2 mm. Wisconsin (Bayfield),—Wickham.

proteus Kirby

12—Form stout, oblong-elongate, parallel, the elytra but feebly cuneiform even in the slightly narrower male; integuments not shining as in all the preceding, but opaque black, the elytra as stated, the legs black, the antennæ black, gradually piceous apically, three-fourths (♂) to but little more than one-half (♀) as long as the body; pubescence evenly distributed, very minute but pale and evident; head finely, not densely punctate, the tempora much less prominent than the very convex eyes, short, rapidly arcuate and oblique to the neck; prothorax barely (♂) to distinctly (♀) wider than the head, wider than long, much narrowed and constricted at apex, strongly and closely punctate, the median smooth line almost obliterated, the prominences even more acute and widely separated than in the two preceding; elytra nearly one-half wider than the prothorax, more than twice as long as wide, with the usual narrow apical truncatures; punctures widely separated and minute, almost uniform; abdomen very finely, densely punctulate; legs unusually densely clothed with short stiff gray hairs. Length (♂ ♀) 7.0–8.3 mm.; width 2.2–2.9 mm. New Jersey.....**discoidea** Hald.

A species was described from Washington Territory, by LeConte (Proc. Acad. Phila., 1861, p. 356), under the name *gibbula*, which, though allied to *aurora* and *coloradensis*, is probably different, the elytral punctures being coarser than in the latter and the head and prothorax more densely punctate than in the former; it is said to be fusco-pubescent, which language would not apply to either of those species; the length is stated to be 8.75 mm.; it is not closely allied to *proteus* as now stated in the lists. No other very useful comparative remarks can be founded upon the very short description, but the locality is somewhat different.

The species described by Schaeffer under the name *Acmæops pinicola* (Bull. Br. Inst., I, p. 341) also belongs to this group. It is probably allied closely to *puncticeps* but differs in its shorter antennæ, these being only half as long as the body in examples which, from the described coloration of the body and legs, are prob-

ably males, and in its more impressed prothorax; the length of *pinicola* is given as 8.5 mm., and it is from the Huachuca Mts. of southern Arizona.

It has occurred to me that *puncticeps* might possibly be the male of *obsoleta*, but in this case the sexual differences in sculpture would be very remarkable, especially on the elytra, where sexual peculiarities of this kind are not observable elsewhere.

In considering the subdivisions of the Lepturini following *Acmæops*, attention is invited to the general catalogue by Aurivillius, in the Schenkling series and recently published, where some definite and determinative order has been attempted. I think, however, that the compiler has still admitted too few separate genera and has unnecessarily reduced certain American types, which seem to be distinct genera, to the status of subgenera, as, for example, the nearctic so-called *Strangalia* (*Ophistomis* Thoms.), *Typocerus* Lec., and *Bellamira* Lec., which are considered subgenera of *Strangalia* in the broad sense, the latter genus in its typical form being represented in his opinion by such diverse species as *obliterata*, *gigas* and *nana*, which have been in our lists under the confusing complex known as *Leptura* Linn. To come at once to the point, the author of the catalogue has not gone far enough; for, admitting *obliterata* Hald., and allies as typical *Strangalia*, the species allied to *gigas* and *nana* cannot properly be included, for they are of an entirely different habitus. Not enough stress has been laid by European authors upon the presence or absence of the remarkable sensitive pits or areolæ on the outer antennal joints, sometimes enormously developed in *Ophistomis*. I think that the possession of these areas by *Typocerus*, renders it generically distinct from *Strangalia obliterata*, even without considering the different tarsal structure. Species such as *Lept. canadensis* and *aurocoma* are considered by Aurivillius to be true *Leptura*, while *læta*, *impura* and *matthewsi* are placed in the genus *Judolia* Muls.; this distinction I cannot follow very clearly. It seems, after all, that general facies or habitus may be of more value in delimiting genera allied closely to *Leptura*, than any single structural character. Our genera may be outlined as follows:

Antennæ without conspicuous sensitive areas on the distal joints.....2
Antennæ with sensitive areas, generally well impressed on the distal joints.....13

2—Prothorax not biconstricted, generally without apical constriction of any kind, except the delimitation of a more or less pronounced apical bead 3

Prothorax constricted only at apex; front very much produced as in *Ophistomis* 7

Prothorax biconstricted; front variable, though generally briefly produced 8

3—Body short and stout, the elytra relatively short, more or less cuneiform; front broadly produced as usual, sometimes more narrowly and very notably so, as in *Judolia quadrillum* Lec. 4

Body elongate and more or less slender, stouter in *Strangalia* 5

4—Elytra pale, with black spots in transverse lines to entirely black, almost immaculate in *impura;* prothorax subangulate at the sides before the middle; third joint of the hind tarsi rather cylindric but short, deeply emarginate. [Type *Lept. sexmaculata* Linn.]. Atlantic to Pacific regions. . . . . **Judolia**

Elytra black or pale, never transversely banded; prothorax generally not at all angulate at the sides; third hind tarsal joint as in *Judolia*. [Type *Lept. vagans* Oliv.]. Atlantic to Pacific regions. **Brachyleptura**

5—Front extremely short before the antennæ and not produced; body small, black or blue, with black or red prothorax; legs very slender, the third joint of the hind tarsi short and bilobed; elytra always parallel, sometimes even inflated posteriorly as in the female of *molybdica* Lec., the apices very obtuse. [Type *Lept. molybdica* Lec.]. Atlantic to Pacific regions. . . . . **Parallelina**

Front normal, briefly and broadly produced before the antennæ. 6

6—Body small, subparallel, the elytra generally moderately cuneiform; basal angles of the prothorax laterally very prominent; legs and antennæ very slender, the third hind tarsal joint bilobed. [Type *Lept. americana* Hald.]. Atlantic regions. . . . . **Charisalia**

Body small to barely of medium size, slender, the elytra cuneiform, vittate when ornamented; tempora unusually developed; third hind tarsal joint short, deeply bilobed. [Type *Lept. vittata* Oliv.]. Atlantic to Pacific regions . . . . . **Strangalepta**

Body larger and stouter, the elytra strongly cuneiform and much narrowed to the tips; third hind tarsal joint elongate, cylindric, emarginate at tip; legs relatively long, slender. [Type assumed *Lept. obliterata* Hald.]. Atlantic to Pacific. . . . . **Strangalia**

7—Prothorax very convex, not constricted at base, with obtusely prominent basal angles, feebly sculptured; elytra broadly, obliquely truncate, elongate, cuneiform, flattened and strongly sculptured in the type; third hind tarsal joint narrow but bilobed. [Type *Ophistomis ventralis* Horn]. Neotropical to southern Arizona. . . . . **Cyphonotida**

8—Elytra cuneiform 9

Elytra very elongate, attenuated as in *Ophistomis* and with sinuate sides posteriorly, the apices rounded 12

9—Tarsi hairy throughout and generally notably stout, the third joint of the posterior short and bilobed; elytra usually shining, sparsely punctate and with transversely banded ornamentation, somewhat

as in *Typocerus*. [Type *X. corusca* n. sp.]. Pacific to Atlantic regions ..... **Xestoleptura**

Tarsi not notably hairy above 10

10—Third hind tarsal joint slender and elongate, emarginate at tip; elytra with feebly arcuate sides to the apices, dark, evenly quadrifasciate with bright yellow; body small in size. [Type *Lept. tribalteata* Lec.]. Pacific regions ..... **Stenostrophia**

Third hind tarsal joint shorter and deeply bilobed, a little less abbreviated sometimes, as in the aberrant *matthewsi* Lec. 11

11—Body relatively short and very stout in form, the prothorax transverse, usually strongly angulate at the sides; elytra rounded at the sides to the apices, black, transversely but irregularly fasciate with bright yellow. [Type *Lept. læta* Lec.]. Atlantic to Pacific regions. **Strophiona**

Body more elongate, the elytra longer and generally more cuneiform, the ornamentation never transversely fasciate; prothorax well developed, generally more or less transverse and prominent at the sides. [Type exclusively European]. Atlantic to Pacific regions. **Leptura**

12—Front very broad, briefly produced; prothorax very strongly biimpressed; legs long, the third hind tarsal joint bilobed; metepisternum normally broad; body with strong *Ophistoma*-like habitus, alutaceous throughout. [Type *Lept. scalaris* Say]. Atlantic regions. **Bellamira**

13—Front broad and short before the antennæ; body rather obese; prothorax biconstricted, the elytra narrowed behind with arcuate external outline, convex, ornamented with spots transversely arranged; legs only moderately elongate; third hind tarsal joint but slightly elongate, bilobed. [Type *Lept. velutina* Oliv.]. Atlantic regions ..... **Typocerus**

Front narrowed and more or less strongly produced; body slender; prothorax not biconstricted, the apex with only the apical beading; elytra attenuate behind, with more or less sinuate external outline, the ornamentation variable; legs long, very slender, the third hind tarsal joint generally very slender, elongate, emarginate at apex. [Type assumed *O. fulvicornis* Bates]. Neotropical and neosubarctic regions. *Strangalia* Lec. and Horn. ..... **Ophistomis**

Some use has been made above of the form of the third hind tarsal joint, which is greatly diversified and somewhat variable even within the restricted genera here defined, so that its real value is by no means definitely fixed. In *matthewsi*, for example, it is not so short as in other forms of *Leptura* as here limited, but that species is aberrant in having the tibial spurs slightly ante-apical, to some degree recalling *Stenocorus*. There are about fifteen described species in the old *Leptura* complex that I have not seen, but these can readily be assigned to the above genera by those possessing

them, unless a few may warrant still further generic definition. The genera as here delimited are apparently valid; at least, it would not be easy to say just which of them should have the subgeneric status, as they differ among themselves strikingly in general habitus or in some marked structural features.

Judolia Muls.

In our fauna this genus, which is distinguished by the robust form of body and tibial modifications of the male, will include, besides the European *sexmaculata* of Linné, and the closely allied *vexatrix* Mann., from the Kenai Peninsula of Alaska, *cordifera* Oliv., *instabilis* Hald., *convexa* and *quadrata*, which are specifically valid, *sexspilota*, *quadrillum* and *impura* of LeConte, *gaurotoides* Csy., and *flaviventris* Schf.; *guarotoides* is aberrant in its uniformly deep black coloration and in having the shortest and relatively thickest antennæ known to me among the allies of *Leptura*, excepting *brevicornis* Lec. Besides these species, there are the following hitherto undescribed:

Judolia pacifica n. sp.—A little narrower than *convexa* and stouter than *cordifera*, colored and ornamented almost exactly as in the former and *instabilis*, the sculpture similar but much finer than in *instabilis*, the prothorax much less prominent at the sides than in those two species and resembling *cordifera* in this respect; head small, densely punctured, the front only moderately prolonged; antennæ (♂) unusually long for this group, being fully as long as the body, slender, not in the least thickened apically, nearly as in *cordifera* but less slender; prothorax as in *cordifera* but smaller, less full anteriorly at the sides and with the basal angles laterally more prominent; elytra much more sparsely and strongly punctured, even more sparsely so than in *convexa*, which they resemble in form and maculation, excepting that the apices are much more acute; abdomen more densely and strongly punctulate and pubescent than in either of those species, the fifth segment broadly, feebly impressed posteriorly. Length (♂) 9.7 mm.; width 4.1 mm. California.

The hind tibiæ of the male are but slightly modified, the serrules along the inner edge feeble and very irregular, much less strong than in *cordifera* or *instabilis* and without the contorted inner flattening of the former species or *quadrillum*. This species is more closely allied to *convexa* than any other, but differs in the much longer antennæ, less prominent sides of the prothorax, denser and more conspicuous abdominal sculpture and vestiture, narrower outline, still smaller head, more acute elytral tips and other features.

Judolia trajecta n. sp.—General form and coloration as in *pacifica* but more convex, black, the elytra pale straw-yellow, with an almost even parallel transverse black fascia from side to side at basal fourth, the two post median spots and black apex nearly as in *pacifica*, *convexa* and *instabilis;* head and prothorax strongly, very densely punctured but with the pubescence sparser, less pale in color and much less conspicuous, not at all concealing the sculpture; antennæ (♂) moderately long and slender, filiform, not quite as long as the body; prothorax wider than long, strongly campanulate, with laterally prominent acute basal angles and a feeble lateral protuberance before the middle, nearly as in *pacifica;* elytral punctures nearly as in *convexa* but stronger and differing but little in size anteriorly and posteriorly, separated by about twice their diameters throughout; abdomen rather closely and subasperately punctulate, the last segment obtusely rounded, feebly impressed apically. Length (♂) 9.5 mm.; width 4.0 mm. Colorado (Boulder Co.).

The hind tibiæ of the male are as nearly as possible completely unmodified, the inner serriculate edge being scarcely traceable; the elytral apices are evenly and narrowly rounded.

Judolia convolvens n. sp.—Narrower and more parallel than the preceding species, black throughout, the elytra tawny yellow, maculate with black in a broad vitta from the humeri to slightly behind basal fourth, there becoming transverse, ending obtusely near the suture, also a large rounded marginal spot just behind the middle and a broad apical region, the suture pale (♂) or narrowly black and with all the markings slightly more extended (♀); pubescence pale, rather long but not dense, herissate on the anterior parts; head very densely punctate; antennæ (♂) slender, filiform, the outer joints somewhat keeled on the inner sides, four-fifths as long as the body, or (♀) half as long as the body, with the outer joints notably short; prothorax very convex, with strong punctures, which are dense throughout, except medially in the male alone, where they are noticeably separated, the sides parallel basally, straight and converging in a little less than apical half, the basal angles obtuse, not prominent; elytra two-fifths wider than the prothorax, twice as long as wide, cuneiform, narrowly truncate at tip, with rather strong and close-set punctures, becoming fine apically; abdomen finely, closely punctulate and with rather long close decumbent pale hairs, the last segment (♂) broadly lobed medially at apex and broadly concave, the concavity moderately deep, ill-defined. Length (♂♀) 9.0–9.5 mm.; width 3.2–3.3 mm. California (Siskiyou and Lake Cos.).

Allied rather closely to *quadrillum* Lec., but differing in the pale and not black ground color of the elytra, still more narrowed and prolonged front, this being quite as developed as in many species of *Ophistomis*, in the somewhat less slender antennæ, more distinct obtuse angle at the sides of the prothorax and denser, finer punctulation and more conspicuous vestiture of the abdomen. The hind

tibiæ of the male are sinuate on the outer edge just behind the middle, and thence broader and parallel to the apex, the inner face being irregularly impressed almost throughout. In the male of *quadrillum* this tibial character is almost similar, except that the outer sinus is broader, less deep and medial, instead of well behind the middle as it is in *convolvens*. This species has been confounded with *Pachyta vexatrix* Mann., described from the Kenai Peninsula of Alaska; the two are very different, as may be seen at once on reading Mannerheim's ample description.

Brachyleptura n. gen.

The sexual differences in this genus do not seem to affect the tibiæ, but in general bodily facies become extreme in certain species, such as *lætifica* Lec., where the much stouter female has scarlet elytra, each bimaculate with small black spots and the male is smaller, much more slender and entirely black, the elytra rarely being red about the humeri and in a small discal spot near the apex, or in the antennal structure of *lacustris*, where the male antennæ are long and subserrate and those of the female very short, more slender and not in the least serrate. The elytral punctures are often serial in arrangement in part, as in *vagans* and *rubrica*. The genus is a compact and isolated group of species, not closely related to any others and comprises *rubrica* Say, *vagans* and *circumdata* of Olivier, *canadensis* Fabr., *cribripennis*,* *dehiscens*, *lætifica* and *sanguinea* of LeConte and *lacustris* and *haldemani* of the present writer. In addition to these the following may be included:

Brachyleptura subquadrata n. sp.—General form and coloration of the body, legs and antennæ as in *circumdata* but very much stouter;

**Canadensis* and *cribripennis* form a rather isolated group of the genus, owing to the broader and deeper gutter demarcating the very strong apical bead of the prothorax, this having in fact more the appearance of a true constriction than is observable elsewhere in *Brachyleptura*, and in the more appendiculate last antennal joint of the male. That they belong here, though, is plainly shown by the general form of the body, particolored and serriform antennal joints, type of sculpture and ornamentation, typically variable coloration of the elytra and type of male sexual characters, which all harmonize thoroughly with other members of *Brachyleptūra*. These two forms are truly valid species and not connected in any way subspecifically. The male antennæ of *canadensis*, for instance, are invariably deep black throughout, while in *cribripennis* the joints are bicolored as in the female; *canadensis* also is much smaller, opaque and not strongly shining, less coarsely sculptured and more constant in coloration.

head relatively larger, with still more converging and only feebly arcuate tempora, finely, extremely densely punctate; antennæ (♀) longer, being three-fourths as long as the body; prothorax as in *circumdata*, campanulate and very convex but with still more strongly everted basal angles and with the very dense punctures scarcely more than half as large, the short inconspicuous and dusky vestiture similar; elytra two-fifths wider than the prothorax, three-fourths longer than wide, the sides only very feebly converging from the base, pale yellow-brown, the apices and a small humeral spot black; punctures strong but less coarse or dense than in *circumdata;* abdomen less strongly and still somewhat more densely punctate. Length (♀) 7.5 mm.; width 2.7 mm. Colorado. Levette collection.

This species is closely allied to *circumdata;* it is, however, very different in general appearance from any of a good series of that species taken in Massachusetts, that I owe to the kindness of Mr. C. A. Frost, and also one from Pennsylvania, due to its much broader outline, as well as other differences alluded to in the description.

Brachyleptura boulderensis n. sp.—Female nearly as in the female of *lacustris* but with the tempora not slightly converging behind and much less prominent than the eyes, as they are in that species, but protuberant, strongly rounded and more prominent than the eyes, the parallel-sided frontal prolongation equally pronounced but not so broad; body, coloration throughout, sculpture and pubescence as in *lacustris*, black with dark yellowish-red elytra, the head and prothorax not coarsely, extremely densely punctate; elytra two-fifths wider than the prothorax, rather more than twice as long as wide, coarsely, rather closely punctate, much more finely apically, the apices truncate; abdomen finely, evenly, not densely punctulate and with short inconspicuous pubescence. Length (♀) 9.0 mm.; width 2.7 mm. Colorado (Boulder Co.).

Besides the differences above noted, this species differs radically from *lacustris* in the sparser and more evenly distributed abdominal punctulation and relatively narrower and more cuneiform elytra, the external outline of which is less rounding behind to the apical truncature.

The species allied to *vagans* Oliv., are rather numerous; they are of peculiar facies, being very short and rather stout in build, with the elytra short, more or less rapidly narrowed from base to apex, strongly dehiscent apically and always very strongly punctured. The individual species are rather variable in elytral coloration; those in my cabinet may be defined as follows:

Outer antennal joints—those beyond the fifth—testaceous only at base . 2
Outer joints testaceous in basal half or but little less 7

2—Head and prothorax relatively rather large, the latter much wider than long and very coarsely, closely punctate; elytra with the punctures relatively only moderately coarse, close-set throughout, each elytron with two very feeble discal riblets; body black in color, the elytra obscure rufous throughout; testaceous part of the outer antennal joints short and nubilous. Length (♀) 11.5 mm.; width 4.2 mm. Kansas.....**dehiscens** Lec.

Head and prothorax relatively much smaller, the latter fully as long as wide to a little longer; elytra more rapidly narrowed from the base, still shorter and apically more dehiscent, very coarsely punctate basally, rapidly less coarsely apically.....3

3—Male with the last ventral simply feebly impressed medially, the impression not limited laterally by prominent sides, though with the usual apical emargination and prominent acute angles.....4

Male with the last ventral more broadly and apically, more or less deeply excavated, the depression bounded laterally by acutely elevated margins, which posteriorly, form part of the acute apical angles.....5

4—Body deep black, rather shining, the elytra black, with a broad dusky rufous vitta along the summit of the flanks from the humeri to the tips; pubescence not conspicuous, erect anteriorly, short and inclined on the elytra; head very densely punctate and dull; eyes (♂) large, separated by twice their widths, the tempora very oblique and retracted as usual; antennæ four-fifths as long as the body, similar in the sexes; prothorax very convex, parallel, obliquely narrowed anteriorly, coarsely, deeply and closely punctate, with narrow shining interspaces; elytra one-half wider than the prothorax, two-thirds longer than wide, the apices very obtusely rounded; punctures very close-set and without lineal arrangement; last ventral segment (♂) smooth and barely at all punctate, the medial impression very feeble and indefinite. Length (♂♀) 9.5–10.0 mm.; width 3.0–3.5 mm. Wisconsin (Bayfield),—Wickham; also Ontario.
cuneatula n. sp.

5—Head with the punctures rather small and very densely crowded, giving an opaque appearance; eyes (♂) separated by barely twice their width; antennæ nearly as in the two preceding species; prothorax very convex, with the herissate vestiture unusually obvious, the punctures close-set or dense, rather coarse (♂) or less so (♀); sides almost evenly converging and broadly arcuate from base to apex; elytra two-fifths wider than the prothorax, short and very rapidly cuneiform, the apices narrowly and arcuately subtruncate; external outline posteriorly notably sinuate (♂), or feebly arcuate to the tip (♀), the punctures very coarse, deep and close basally, sometimes with traces of lineal arrangement postero-externally, pale red-brown throughout in specimens at hand. Length (♂♀) 7.5–9.0 mm.; width 2.5–3.2 mm. Northeastern States and Canada. [*brevis* Kirby].....**vagans** Oliv.

Head with the punctures larger, not so crowded, the lustre not opaque..6

6—Black, somewhat shining; elytra pale red-brown, the suture infuscate in the type from near the scutellum to the apices, which are nar-

rowly and strongly rounded; head transverse as usual, alutaceous, the punctures all distinctly separated by from once to twice their diameters; eyes (♂) separated by a little less than twice their widths; antennæ as in *vagans* but more slender and distinctly shorter; prothorax barely visibly wider than the head, not distinctly wider as in the other species, the sides almost evenly rounded and converging throughout and with similar retracted basal angles, differing from any other species, however, in having the rather coarse punctures somewhat sparse, being separated by from once to twice their diameters; elytra as in *vagans*, except that the punctures basally are not so coarse, the external outline posteriorly not sinuate but straight and the apices much more acutely rounded; concavity of the fifth ventral (♂) broad and deep. Length (♂) 8.0 mm.; width 2.8 mm. Locality unrecorded.....**fusella** n. sp.

Black throughout, except that the elytra sometimes have each a large rounded rufous spot just behind the humeri, extending inwardly to the median line of each; pubescence nearly as in the preceding; head distinctly narrower than the prothorax, the punctures moderate and very close, almost contiguous, the occiput sloping unusually steeply to the neck; eyes separated by slightly more than twice their own widths; antennæ as in *fusella;* prothorax evenly narrowed from base to apex and with unusually feebly arcuate sides, the punctures moderately coarse and slightly separated; basal dorsal constriction evident; elytra barely two-fifths wider than the prothorax, one-half longer than wide, the converging sides becoming barely at all sinuate, the external apical angles unusually distinct, the inner outline rounding; punctures only about one-half as large as in *vagans* and separated by nearly their own diameters basally, smaller and somewhat lineate in arrangement postero-externally, black, with a large humeral red spot in the type; excavation of the fifth ventral (♂) narrower than in the preceding and still deeper, the elevated side-walls even thinner apically. Length (♂) 7.7 mm.; width 2.6 mm. Locality unrecorded....**puella** n. sp.

7—Body more elongate than in *vagans*, black, the elytra wholly bright red-brown in the type; pubescence rather sparse but coarse, pale, a little longer and more distinct than in *vagans;* head with moderate, densely crowded punctures, the eyes large and very convex as usual; antennæ (♀) extending almost to the tips of the elytra; prothorax fully as long as wide, convex, unusually shining, the punctures coarse, deep and close-set throughout; sides converging and almost evenly arcuate from base to the much narrowed apex, where the small constriction delimiting the apical bead is distinct as in *vagans;* elytra one-half wider than the prothorax, three-fifths longer than wide, larger and longer than in *vagans* and with punctures that are very nearly as coarse basally but less crowded, being in fact clearly separated, much less rapidly or pronouncedly smaller apically; apices narrowly truncate. Length (♀) 10.0 mm.; width 3.5 mm. Pennsylvania (Carlisle Junction),—A. B. Champlain.

champlaini n. sp.

A second male specimen, with entirely black elytra, is placed with the type of *puella* for the present, although there are certain features that do not accord very well; it is evidently stouter, the prothorax broader and with more arcuate sides, the eyes relatively larger, being separated by less than twice their own widths, the outer apical angle of the elytra more obtuse and the punctures of both the prothorax and elytra stronger, though, on the latter, they are equally well separated and better defined on the waxy ground, rather than on the subopaque general surface of *puella*; they are also much stronger posteriorly than in that species. I think that this is a well defined subspecies of *puella*, which may take the name **tetrica** (n. subsp.); its locality is likewise unrecorded. The locality for *dehiscens* is said to be Oregon, and the antennæ are described as "entirely black"; otherwise the Kansas example described above seems to be typical.

Parallelina n. gen.

A few species of small size, generally slender form and parallel elytra constitute this genus, and, as in the preceding genus, form a compact and clearly limited division of the Lepturini. As far as known to me the species assignable to *Parallelina* are *chalybea* Hald., *exigua* and *nana* (with var. *hæmatites*) of Newman, *molybdica* LeConte and *subargentata* and *similis* (*rufibasis* Lec.) of Kirby, also the two described below. Much confusion exists in the *subargentata* group, owing to a very puzzling inconstancy in the coloration of the legs and basal antennal joint, these differences characterizing both *subargentata* and *similis* and seem to indicate polymorphism rather than simple gradual variation. *Similis* differs from *subargentata* in having the elytral sculpture deeper and less close-set, which, with the more dusky and very inconspicuous pubescence, gives the surface much greater lustre; the legs are most frequently black in *subargentata* and bicolored in *similis*. Of forms not examined, I am of the opinion that *ruficeps* Lec., from Georgia, is a distinct species, but am less convinced concerning *rhodopus* Lec., from California, which is black, with entirely red legs; it is however probably distinct also. The following is another species of the *subargentata* group but much smaller and with narrower prothorax:

Parallelina filicornis n. sp.—General form, coloration, sculpture and short pale ashy vestiture as in *subargentata*, but with sparser and feebler

elytral punctures, these being as sparse as in *similis* but feebler and more diffusedly impressed, black throughout in the type; head and very slender antennæ similar; prothorax longer than wide, slightly narrower than the head, otherwise nearly similar; elytra narrower and only about a third wider than the prothorax, two and one-half times as long as wide; abdomen shining, the fine punctulation not dense, the ashy hairs decumbent; legs slender, shorter, the tarsi extremely slender, much more so than in *subargentata*. Length (♂) 5.5 mm.; width 1.3 mm. Washington State.

In *subargentata* and *similis* the prothorax is almost as wide as the head, but in *filicornis* it is evidently narrower. The following species is widely distinct from any other known species of the genus in its stouter form:

Parallelina campanifera n. sp.—Stout in form, parallel, moderately convex, shining, alutaceous anteriorly, deep black throughout, the pubescence everywhere short, not dense, dusky and inconspicuous; head small, very finely, closely punctate, the front very short before the eyes though evident; tempora rapidly oblique and feebly arcuate; antennæ (♀) slender, filiform, with the outer joints gradually shorter, not two-thirds as long as the body; prothorax much larger than the head, rather longer than wide, strongly convex, rather strongly, closely punctate, with a narrow impunctate line, the sides gradually and moderately converging and broadly arcuate from base to apex, gradually more strongly so apically, the basal angles everted and very acute; elytra not a third wider than the prothorax, perfectly parallel, two and a third times as long as wide, very broadly obtuse at apex, the apices narrowly subtruncate; punctures as large as those of the prothorax but separated by twice their diameters, fine but asperulate apically; abdomen shining, with minute though ashy vestiture, finely, not densely punctulate, closely so basally, sparsely apically; legs slender, the basal joint of the hind tarsi much longer than the remainder. Length (♀) 8.3 mm.; width 2.7 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

There is no described species with which this can be closely compared. The male is probably notably less stout. The head is unusually small, even for the present genus.

Charisalia n. gen.

The only species at present known to form part of this genus are *americana* Hald., and *capitata* Newm. *Charisalia* is rather closely allied to the preceding, but there is a notable difference in habitus, and the maxillary palpi are much larger and longer than in *Parallelina*. There is a remarkable difference in the form of the fourth palpal joint pertaining to four slender specimens of *capitata* from Ontario, and two larger, stouter and more parallel examples from

Bayfield, Wisconsin, which I have before me; in the former this joint is stouter and very obliquely truncate, while in the latter it is narrower, more elongate and transversely truncate; this may be one of the normal sexual distinctions of the genus, but as I have only two examples of *americana*, both females, in which the palpi are of the Bayfield type, this cannot be decided at present. No such sexual character exists, so far as can be observed, in *Parallelina*.

Strangalepta n. gen.

This genus consists, so far as known to me, of the species *lineola* and *pubera* Say, *rubida* Lec. and *vittata* Oliv. The first varies somewhat geographically and possibly *indirecta* Newm. may have to be restored for the eastern representatives of *lineola*, which are much larger than those of the Mississippi Valley, probably forming a subspecies. In *Strangalepta* there is an unusual development of the tempora, this being observable in *pubera*, as well as *vittata;* they are also subimpunctate and strongly shining as a rule, as in the *basalis* section of *Leptacmæops*. In *vittata* there is a remarkable male tibial character that does not seem to have been mentioned; the hind tibia of that sex is broadly angulated within just behind the middle.

The following undescribed species has just been received:

Strangalepta keeni n. sp.—Form somewhat more abbreviated than in *pubera*, the prothorax nearly as in *lineola*, deep black throughout the body, legs and antennæ, the elytra bright rufous, with the tips, extending forward narrowly and slightly at the sides, black; pubescence rather sparse and inconspicuous, yellowish above, grayer beneath; head finely, very densely punctate and dull, with a very fine smooth median line, the eyes large and prominent, the tempora very much less prominent than the eyes and only about a fourth as long though rather tumid and almost impunctate; antennæ slender, almost as long as the body, the third and fifth joints subequal and much longer than the fourth; prothorax a little longer than wide, campanulate, evenly convex, more strongly punctured than the head and very densely, with a fine smooth median line, broadly impressed medially at base, the basal angles laterally very prominent and acute; elytra moderately cuneiform, about three times as long as wide, one-half wider than the median part of the prothorax, the apices transversely truncate, with blunt sutural and rounded external angles, the surface very shining, the punctures coarse, gradually somewhat less so posteriorly, everywhere very sparse, separated by about four times their diameters; abdomen rather finely punctate, closely basally, more sparsely distally; legs rather long and slender, the basal joint of the hind tarsi not

quite as long as the remainder, the tibiæ unmodified. Length (♂) 10.0 mm.; width 2.8 mm. British Columbia (Inverness).

Allied somewhat to *rubida* Lec., but smaller and with deep black and not fusco-ferruginous legs and much sparser elytral punctures. The single example was one of the last captures of the Rev. J. H. Keen before his final departure for England, and I take great pleasure in naming it in honor of one to whom we owe so many interesting discoveries among the Coleoptera of the Pacific coast.

Strangalia Serv.

There is a strong consistency of habitus pervading this genus, which in our fauna consists of *perductor* Walker, *obliterata*, *abdominalis*, *elegans* and *cruentata* of Haldeman—the last differing somewhat in facies because of its shorter and less cuneiform elytra but connected very well through *plagifera*,—*subhamata* and *plebeja* Rand., *propinqua* Bland, and *vitiosa*—which is not by any means a variety of *obliterata*,—*deleta*, *soror* and *plagifera* of LeConte. *Elegans* is not a variety of *subhamata* but quite distinct, as shown by the females in my collection, the prothorax being much broader in *elegans*, as well as differently ornamented; the males of this species are very much more slender than the females and very differently colored, being largely black, the sutural black vitta being peculiarly sagittiform in a way not suggested in the female. *Abdominalis* has a marked peculiarity of thoracic sculpture and a different scheme of elytral ornamentation; it might very rationally be separated as a subgenus. The far western species allied to *obliterata* are numerous, very uniform in ornamentation and facies and, so far as represented in my collection, may be defined as follows:

Elytra each with a black discal spot near basal third; apical black area not extending to the tip but there becoming dusky rufous.....2
Elytra never with trace of the black discal area, the black apical area extending to the apices.....4
Elytra similarly devoid of the black discal area but rather brightly pale at apex.....7
2—External apical angles of the elytra very acute and slightly everted; submedian black band of the elytra broadly interrupted at the suture. Length (♀—as usual, only to the elytral tips) 15.8 mm.; width 5.5 mm. Vancouver Island.....**perductor** Walk.
External apical angles acute but not in the least everted, the external outline of the elytra continuing the feeble arcuation to their tips..3

3—Last dorsal segment (♀) rapidly narrowing from the very broad base to the apex, which is obtuse though much narrower than in the preceding; coloration and sculpture nearly similar, the body distinctly less stout. Length (♂ ♀) 13.0–14.5 mm.; width 3.8–5.1 mm. Oregon (Clackamas Co.).....**obliterata** Hald.

Last dorsal (♀) very much narrower at base, the sides much more gradually converging to the similarly obtuse apex; body similar in coloration and sculpture but much smaller in size and with relatively smaller head; antennæ (♀) shorter than in the two preceding; occiput less steeply declivous to the neck; pronotum nearly as in *obliterata*, less opaque and more strongly punctured than in *perductor;* last ventral (♀) less impressed at apex. Length (♂ ♀) 11.0–12.5 mm.; width 3.3–4.0 mm. Idaho.....**idahoensis** n. sp.

4—Prothorax testaceous, with a broad black discal area extending from apex to base, the entire prosternum also black; pubescence throughout much longer, paler and more distinct than in the preceding three species; front more strongly produced; outer antennal joints more strongly bicolored; pronotal punctures finer and denser, the surface opaque; outer angle at the elytral apex more prolonged posteriorly. Length (♀) 14.0–15.7 mm.; width 4.3–5.0 mm. California. Four exactly similar examples.....**vitiosa** Lec.

Prothorax wholly black or with a testaceous vitta basally on the inflexed sides and not appearing dorsally; body smaller in size and of much narrower outline.....5

5—Last dorsal segment (♀) strongly compressed and elevated basally, probably however partially due to lateral shrinkage in the only female example at hand, its entire surface finely, rather closely punctulate, with the short hairs pale and very evident; thoracic base very broadly and gradually lobed medially; elytral punctures more close-set than in either of the two following, being separated by about twice their diameters basally; head rather well developed, the eyes (♀) separated at the minimum by three times their width. Length (♂ ♀) 11.0–12.0 mm.; width 3.5–3.8 mm. Washington State and Idaho.....**propinqua** Bland

Last dorsal segment not strongly elevated medially toward base and with the punctures throughout very much sparser in *minuscula* and with different pubescence in *regularis;* elytral punctures sparser, separated basally by two to three times their diameters.....6

6—Body rather larger and stouter, with more elongate elytra, black, the antennæ and legs deep black throughout; sculpture, vestiture and elytral coloration as in *propinqua;* head similar; antennæ (♀) much longer, the outer joints not so abbreviated, the fourth joint relatively longer; prothorax similar, except that the median lobe at the base is relatively much narrower, being only a third as wide as the base; elytra more rapidly cuneiform from the base; last dorsal segment larger, broader at base, more rapidly cuneiform, the punctures similarly numerous but with the hairs much more minute, less pale and very inconspicuous. Length (♀) 13.0 mm.; width 4.0 mm. Locality unrecorded.....**regularis** n. sp.

Body smaller and narrower; head (♀) smaller and with the eyes separated

by less than three times their width, their inner margins much more converging than in either of the preceding; antennæ nearly as in *propinqua*, except that they are still somewhat more slender; prothorax similar; last dorsal segment nearly similar in outline, but with the fine punctures twice as sparse. Length (♂ ♀) 9.5–11.0 mm.; width 2.7–3.4 mm. Colorado. Levette collection.

minuscula n. sp.

7—Form narrow; size small; color black, the entire abdomen, except at base, and the legs, as well as the antennal prominences as usual, pale; elytra pale, with a small marginal spot behind the humeri, a transverse entire fascia before the middle and another near apical fourth, black; sculpture and vestiture nearly as in the other species; antennæ notably shorter, dusky testaceous, the outer joints partially infuscate. Length (♂) 9.7 mm.; width 2.9 mm. California.

soror Lec.

A number of Walker's species will have to be reinstated, having been too hastily reduced to synonymy; another very conspicuous instance occurs in the genus *Acanthocinus* of our present lists, as will appear.

Cyphonotida n. gen.

The type of this genus is *Ophistomis ventralis* Horn, described (Proc. Cal. Acad. Sci., ser. 2, IV, p. 401) from Lower California but apparently the same as the species that I sent to Mr. Bates many years ago for remark. The statements of that author (Ann. N. Y. Acad., VI, p. 41) would seem to show that it is closely allied to *lævicollis* Bates, though possibly different. The antennæ have no trace of poriferous sensitive areas and the genus is evidently a member of the Lepturid and not of the Ophistomid series. It was surmised by Bates that it should be separated generically from *Ophistomis*, but he gave scarcely any reason beyond the very convex and anteriorly declivous pronotum.

Xestoleptura n. gen.

A genus largely developed on the Pacific coast and almost confined to those regions, the only Atlantic coast species known to me, *octonotata*, being of peculiar habitus, due to its much narrower and more elongate form and different though analogous ornamentation. The *crassipes* group has given rise to much confusion, owing to the numerous more or less local developments as in *Omus*, *Brennus* and other Pacific coast groups. LeConte having described *crassipes* from the male and *crassicornis* from the female, could readily be

made a plausible pretext for suggested synonymy by one so inclined; but in reality *crassicornis* is a decidedly different species from *crassipes*, not only because of its much larger size but in its style of elytral maculation, as well as other features. Besides *crassipes* and *crassicornis* of LeConte, *Xestoleptura* will include a number of species and subspecies related to *crassipes*, as defined below, as well as *behrensi* Lec., *octonotata* Say and the two following very distinct species:

Xestoleptura corusca n. sp.—Moderately stout and convex, black and very strongly shining, the abdomen bright red throughout, the legs and antennæ wholly pale ferruginous; elytra with three moderately broad, successively decreasing yellow fasciæ, interrupted at the suture, basal, at basal third and just behind the middle, each also sometimes with a small pale spot near the apex near inner third; pubescence pale, not dense, erect and bristling anteriorly, short, sparse and inclined on the elytra; head rather convex, strongly and densely punctate, the tempora nearly as prominent as the eyes, gradually arcuato-converging to the nuchal constriction, which is impunctate; antennæ (♂) heavy and long, extending to apical fourth of the elytra, subcompressed, serrulate except basally, very pale and uniform testaceo-ferruginous in color; prothorax barely wider than the head, rather longer than wide, constricted and moderately narrowed at apex, subparallel basally, the basal angles not prominent; punctures coarse laterally, finer medially, everywhere well separated; elytra four-fifths wider than the prothorax, rather more than twice as long as wide, strongly cuneiform, with nearly straight sides, the rounding apices narrowly truncate at the suture; surface very sparsely punctate, finely basally, still more minutely apically; legs stout; tarsi stout, the posterior longer than the tibiæ, coarsely and pallidly hairy throughout. Length (♂) 12.7 mm.; width 4.0–4.2 mm. California (Grant Forest),—Hopping.

Not closely allied to any other species and readily determinable from the characters given in the description; it is one of the most shining Lepturids known from our faunal regions.

Xestoleptura columbica n. sp.—Narrower, more parallel (♀), convex, deep black throughout excepting the elytra, the tibiæ pale, dark at tip; tarsi missing in the type; pubescence short and coarse, close and erect but not conspicuous anteriorly; head moderately strongly, closely punctate, with a medial stria; tempora scarcely at all less prominent than the eyes, rounding behind them to the nuchal constriction, which is not impunctate; antennæ slender, deep black, moderate in length; prothorax equal in width to the head, scarcely as long as wide, rather finely but strongly, very densely punctate throughout, the sides parallel and barely sinuate to beyond the middle, then feebly oblique to the unusually broad apex, the constriction only moderate, much less developed than in the preceding or in the *crassipes* type; elytra distinctly cuneiform,

only one-half wider than the prothorax, pale luteous in color, with a very broad black fascia on each from behind the humerus to the pale sutural bead, a rounded marginal spot at the middle, the apices black in distinctly less than apical third, prolonged along the suture, diminishing, nearly to the oblique fascia and enclosing the usual pale subapical spot; punctures moderately strong, perforate, separated by twice their diameters to but little more, fine and relatively sparser apically. Length (♀) 11.0 mm.; width 3.7 mm. British Columbia,—Keen.

Recognizable very readily from *crassipes* and allies by the much stouter head and prothorax, cuneiform and not parallel elytra in the female, fuller tempora and many other features.

In the *crassipes* group there is a very marked and constant sexual difference in the form and ornamentation of the elytra, these being strongly cuneiform in the male, with the basal two-fifths to half wholly pale and devoid of maculation, excepting a small marginal post-humeral black spot; there is a submedian black fascia, usually broadly interrupted at the suture, and the posterior third is solidly black, excepting a small pale subapical spot. In the female the elytra are perfectly parallel, much more broadly obtuse at apex, and there is always an oblique discal fascia from behind the humeri to or toward the suture, a large rounded marginal spot at the middle and a black area in rather less than apical third and including a much larger pale area, the black area more or less prolonged anteriorly and narrowly along the suture, usually to the oblique fascia. The coloration of the abdomen and antennæ is variable and they are generally much paler in the female; the abdomen is narrowly fasciate with a darker tint in the female as a rule.

In treating of the allies of *crassipes* before me, I will not include the distinct *crassicornis*, for the original description of the female of that species states that it is ferruginous, shining, the elytra sparsely and finely punctate, with the three fasciæ and the black apex all connected at the suture and margin; the prothorax is densely, anteriorly more finely, punctate and apparently has the usual form of the *crassipes* group; the antennæ of the female are stout and not at all more than half as long as the body; the length of the female type, which is from an unrecorded part of California, is 15 mm. This could by scarcely any possibility be the female of *corusca*, above described, because the sculpture of the prothorax differs greatly and there is no such marked sexual disparity in the antennæ or coloration

of the body, as would be implied, now known among the other species of the genus. The close allies of *crassipes* may be distinguished as follows; since the coloration in both sexes is constantly as above described, only the salient points of difference will be mentioned:

Metepisternum coarsely punctured posteriorly, finely and densely so anteriorly; elytral punctures throughout well separated, moderate in size basally, fine distally; male antennæ extending nearly to the tips of the elytra; pronotal punctures small but perforate, very close-set but distinct; female elytra parallel nearly to the tips, there rather rapidly rounding. Length (♂ ♀) 9.0–11.7 mm.; width 2.8–3.7 mm. Pacific coast (from Sta. Cruz Co., Cal., to Vancouver Island). [*xanthogaster* and *fasciventris* Lec.]..... **crassipes** Lec.

A—Nearly similar, except that the head and prothorax are relatively smaller, the latter shorter and with the fine punctures so dense as to be discerned individually with difficulty; elytral punctures basally distinctly more close-set; antennæ (♂) a little shorter. Length (♂) 9.0 mm.; width 2.8 mm. California (Mount Shasta). **shastana** n. subsp.

Metepisternum coarsely punctured throughout; body black, shining, the abdomen yellow, with faintly dusky fasciæ; legs pale; antennæ pale, dusky at base and on the outer joints except toward their bases, the tenth joint more than twice as long as wide; prothorax strongly punctate, the punctures separated by their own diameters or more medially; elytra (♀) parallel but gradually narrowing from slightly behind the middle, very gradually rounding to the narrow sutural truncatures, the punctures sparser than in the preceding. Length (♀) 10.5 mm.; width 3.0 mm. Vancouver Island. **vancouveri** n. sp.

Metepisternum finely, more closely punctured throughout, with a few larger punctures interspersed posteriorly; body much larger, stouter, similar in coloration, except that the slender abdominal fasciæ are black in the type; antennæ shorter and stouter, the tenth joint (♀) not quite twice as long as wide; prothorax larger, everywhere extremely densely and evenly punctate, the punctures fine but deep, perforate and distinct; elytra parallel to near the tips, there rapidly rounding as in *crassipes*, the punctures finer and sparser, except through a relatively shorter distance basally, the maculation nearly similar, except that the median lateral spot is more transverse and more broadly isolated; abdomen more densely punctulate. Length (♀) 13.5 mm.; width 4.3 mm. California (locality unrecorded). **muliebris** n. sp.

The different outline of the elytra posteriorly in *vancouveri*, is well marked and distinctive, as well as the stronger and sparser thoracic sculpture; *muliebris* also has a distinct appearance when compared with the female of *crassipes*.

Possibly *rufula* Hald., from Lake Superior, may also enter this genus, but I have no example of it at present.

Stenostrophia n. gen.

The ornamentation in this genus is wholly unlike that observable in any of the preceding, excepting *Xestoleptura*, where it is foretold in such species as *corusca*. The species composing *Stenostrophia* are small in size, rather narrow, though moderately inflated and suboval in the female; they are, so far as discovered, *tribalteata* Lec., *serpentina* Csy., and *coquilletti* Linell—all from the Pacific coast regions. *Serpentina* has been hastily united with *tribalteata* but is a valid species, differing greatly in the structure of the antennæ, particularly those of the male, where those organs are long, slender and filiform, being scarcely at all shorter than the body and are constantly testaceous in color throughout; in *tribalteata* they are much thicker, shorter, more compact, differ less sexually and are always deep black in color. My two examples of *coquilletti*, from San Diego, indicate remarkable sexual diversity, the pubescence of the female being longer, coarser and very dense, with the punctures of the pronotum strong and extremely close-set, while in the male the pubescence is shorter, finer and sparse, the punctures of the prothorax being finer, feebler and notably sparse throughout. I have noted no such sexual characters in the allied *tribalteata* and *serpentina*, and it would be desirable to have more material, carefully collected, before announcing these differences as wholly due to sex. The large series in the National Museum, from which Linell described the species, includes both the forms mentioned.

Strophiona n. gen.

In this genus the species are stouter than in any other, very constantly and distinctively ornamented by transverse pallid bands, but in a way quite different from that characterizing the preceding genus, from which also they differ in the more prominent sides of the prothorax and form of the third hind tarsal joint. The described species are *nitens* Forst., from the Atlantic regions and *læta* Lec., from California. The six species in my collection may be outlined as follows, the ornamentation being of the same type throughout, with only more or less slight variation:

Antennæ more slender, extending to the posterior parts of the elytra in the male, much shorter in the female; species eastern in range, not crossing the Rocky Mountains to the westward.....2

Antennæ shorter and much stouter, extending barely beyond the middle of the elytra even in the male; species of the far west, not crossing the Rocky Mountains to the eastward; second and third elytral fasciæ broadly united at the suture in both sexes, the first tending to unite with the second at the suture.....3

2—Head evidently narrower than the prothorax in both sexes, though less distinctly so in the male, the elytra in the latter sex more elongate, only very gradually cuneiform, more than twice as long as wide, the second and third fasciæ narrow, seldom exhibiting any tendency to unite by sutural extension; pronotal punctures fine, irregular in distribution, generally close-set. Length (♂) 10.5–11.8 mm.; (♀) 9.5–12.7 mm.; width (♂) 3.6–3.9 mm., (♀) 3.4–4.7 mm. Rhode Island, New Jersey and Pennsylvania.

nitens Forst.

Head in the male about as wide as the prothorax, the elytra in that sex very much shorter, relatively broader at base and rapidly cuneiform, not quite twice as long as wide, the external apical angle not so posteriorly prolonged as in *nitens* and very minutely dentiform; second and third golden fasciæ broadly uniting longitudinally at the suture; pronotal punctures not quite so small and less close-set. Length (♂) 11.8 mm.; width 4.1 mm. Colorado.....**bellina** n. sp.

3—Prothorax large, wider than long, strongly angulated and prominent at the sides just before the middle; body more obese.....4

Prothorax about as long as wide, only slightly and arcuately subinflated at the sides before the middle.....5

4—Elytra in the female shorter, much less than twice as long as wide, more strongly cuneiform than in *nitens*, minutely, not densely punctulate; pronotal punctures much stronger, moderately close-set; basal joint of the antennæ slender, arcuate and narrow basally, somewhat inflated apically; last dorsal segment of the abdomen triangular, flat, narrowly rounded at tip. Length (♀) 13.0 mm.; width 5.3 mm. California (near Sacramento—the type locality).....**læta** Lec.

Elytra in the female longer, more gradually though strongly cuneiform, very nearly twice as long as wide, the punctures twice as large and relatively denser; pronotal punctures not quite so strong as in *læta* and denser; basal joint of the antennæ thicker, evenly obconical; last dorsal segment of the abdomen slightly convex, differing greatly from *læta* in having the sides feebly converging to the much more broadly rounded apex. Length (♀) 15.0 mm.; width 5.6 mm. New Mexico.....**ostenta** n. sp.

5—Head (♂) as wide as the prothorax, very densely punctate and opaque, the antennæ moderately thick, the tenth joint more than twice as long as wide; prothorax with almost even, rather strong punctures, separated by from once to nearly twice their diameters, the vestiture coarser and more evenly distributed than in *læta;* elytra strongly cuneiform, four-fifths longer than wide, very finely and closely punctate; lateral beading and contiguous flanks testaceous through-

out the length, rather widely and equally separating the black areas from the side margin. Length (♂) 10.5 mm.; width 3.7 mm. California (Los Angeles).....**tigrina** n. sp.

Head (♂) obviously narrower than the prothorax, much less developed than in *tigrina* and not so densely punctate, the interspaces shining; antennæ nearly similar, dusky-testaceous throughout and very opaque except basally, the tenth joint not quite twice as long as wide; prothorax shining, the punctures rather strong and sparse, dense only laterally, the vestiture long, rather sparse, not at all concealing the surface; elytra narrower, moderately cuneiform, barely a third wider than the prothorax, with stronger and more separated punctures than in *tigrina*, the flanks not pale along the pale lateral bead; legs more slender; body much smaller and narrower than in *tigrina*. Length (♂) 8.8 mm.; width 3.0 mm. California (locality unrecorded).....**reducta** n. sp.

There seems to be no suggestion of sexual diversity in thoracic punctuation or vestiture in this genus, and I have but little doubt that the species above defined are amply valid, though described from very limited material except in the case of *nitens*.

Leptura Linn.

In our fauna this genus, which has been the recipient of many discordant elements and, as now organized, has become a very discouraging complex, in which species obviously allied are sometimes widely separated in the series, may be divided very satisfactorily into well defined subgeneric groups as follows:

Antennæ shorter, never as long as the body in either sex.....2
Antennæ longer, as long as the body to much longer in the male.....4
2—Maxillary palpi more developed, very long; body large, the hind body strongly cuneiform.....Group I
Maxillary palpi of moderate size; hind body less convex or cuneiform as a rule.....3
3—Prothorax rounded at the sides, or at least not angulate; last dorsal segment of the female simple.....Group II
Prothorax strongly angulated at the sides; last dorsal of the female strongly carinate apically.....Group III
4—Tibial spurs slightly ante-apical in insertion; tarsi less slender, somewhat hairy above as well as beneath; prothorax rounded to somewhat prominent at the sides.....Group IV
Tibial spurs apical; tarsi extremely slender, scarcely at all hairy above; prothorax of peculiar structure, being a truncated cone with slightly arcuate median parts of the sides, or a regular trapezoid slightly prominent at apex and base.....Group V

The third hind tarsal joint is strictly bilobed throughout. There

are probably some other subgeneric groups in our fauna, necessitated by species that I do not have before me at present, such perhaps as *brevicornis* Lec.

Group I.

Subgenus **Megaleptura** nov.

The two very large and conspicuous species *emarginata* Fabr., and *gigas* Lec., alone constitute this rather isolated subgenus. They are well known, though owing to their strong and high flight, are difficult to capture and therefore not over common in collections. They are throughout of a brilliant glossy black, the elytra dull and rufous, with black tips, feebly and closely lyrate in *gigas*, plain in *emarginata*.

Group II.

Subgenus **Cosmosalia** nov.

There are eight species in my collection assignable to this subgenus, comprising, among those heretofore described, *nigrella* Say and the closely allied though more elongate *carbonata* Lec., also *auripilis* and *dolorosa* of LeConte, *chrysocoma* Kirby—the type of the subgenus—and *nigrolineata* Bland; it is probable that *coccinea* Lec., should also be included. The following is allied to *nigrella* and *carbonata:*

Leptura (Cosmosalia) præstans n. sp.—Form very elongate, narrower and rather less convex than *carbonata*, deep black and moderately shining, the elytra throughout bright red, excepting a marginal sharply defined streak of black in posterior two-fifths; pubescence very short, blackish, erect on the anterior parts; head moderately finely, very densely punctate, the tempora slightly more prominent than the eyes, tumid and subangulate, transverse at base; antennæ (♀) rather slender, extending barely at all behind the middle, the tenth joint twice as long as wide; prothorax as in *nigrella* but more unevenly punctate, the punctures medially and laterally moderately coarse and densely confluent, between these areas coarser and well separated, the smooth median line distinct, tumid on the basal declivity; elytra two and one-half times as long as wide, two-thirds wider than the prothorax, the sides parallel, abruptly rounding near the middle, thence straight and moderately converging to the broad apical arcuation extending to the narrowly sinuate apices, the punctures a little smaller and less close-set than in *nigrella* or *carbonata*, much less rapidly coarser basally than in the latter; abdomen shining, finely, sparsely punctate. Length (♀) 19.0 mm.; width 5.8 mm. Colorado.

The last dorsal segment of the abdomen is broader basally and with more strongly converging sides than in either of the species mentioned in the description. In *nigrella* the male elytra are dark brown in color throughout.

The following species is allied to *auripilis* and *chrysocoma*, which are amply distinct and by no means connected subspecifically; *auripilis* is twice as large as *auricoma* and differs in its much less crowded and more distinct thoracic punctures, as well as in the less rapidly cuneiform elytra and many other features:

Leptura (**Cosmosalia**) **aureola** n. sp.—Form, size and vestiture nearly as in *auripilis* Lec.; head and antennæ nearly similar, except that the latter are not black throughout but become largely pale testaceous basally, excepting the basal joint, which is black; prothorax of similar outline but less densely pubescent, the hairs shorter, the punctures much less close-set, being separated medially by two to three times their diameters; elytra nearly similar but with the punctures less fine, differing distinctly in the external outline apically, which here rounds in more rapidly to the narrower apical truncatures. Length (♀) 16.8 mm.; width 5.5 mm. Colorado.

The two type examples, from the Levette collection, are perfectly similar and have been compared with a typical female of *auripilis* from Jemez Springs, New Mexico, virtually the type locality, which is Santa Fé. The fourth palpal joint in *auripilis* has a very deep excavation extending from near the base to and through the truncate apex. A third female of *aureola* before me, from Boulder Co., Colorado, more clearly displaying the palpi and differing from the types only in having entirely black antennæ—possibly from greater maturity—the fourth palpal joint is very different, having only a very feeble elliptical flattening, extending from basal to apical third of the length. A single male, also from Boulder Co., is much smaller and very much more slender than the female and has the fifth ventral broadly, rectilinearly truncate at apex, with broadly rounded angles at the sides. The prothorax is relatively distinctly larger in *auripilis* than in *aureola*.

Group III.

Subgenus **Cercolia** nov.

Two similarly colored species alone compose this subgenus, as far as known to me. They are deep black throughout the body, legs and antennæ, and with hexagonal, strongly, very densely

punctate prothorax, but the elytra are pale reddish or yellowish brown, with the apices black; the pubescence is fine, rather long, erect and distinct on the anterior parts, short, inclined and sparse on the elytra; they may be distinguished as follows:

Elytral punctures close-set throughout and especially on the flanks, where they are subcontiguous; body stouter and larger, the black apical area of the elytra not ascending at the sides. Male only moderately narrower and with more cuneiform elytra than the female and much more closely punctate; fifth ventral segment remarkably modified, broadly arcuato-truncate at apex, with an acute sharp incision, triangular in form, deeper than wide and extending almost to the base of the segment. Female with the ridge of the last dorsal segment horizontal along its summit to the extreme apex, often turned upward and very prominent at tip; abdomen finely, feebly and not densely punctate. Length (♂♀) 13.0–16.8 mm.; width 4.4–6.0 mm. Pennsylvania to Wisconsin (Bayfield).

proxima Say

Elytral punctures not quite so coarse and everywhere distinctly separated, black of the elytral apices ascending at the sides. Male smaller and narrower than in *proxima*, with the elytra more rapidly cuneiform and relatively much more acutely rounded at apex, the narrow truncatures similar, otherwise nearly as in *proxima*, except that the sides of the prothorax are not so strongly angulated and the antennæ a little shorter; fifth ventral segment differing profoundly, being evenly truncate at apex and without trace of sinus or incisure; abdomen still more densely punctulate. Female not at hand. Length (♂) 11.7–12.5 mm.; width 4.0–4.2 mm. Wisconsin (Bayfield),—Wickham.....**minnesotana** n. sp.

That two forms, resembling each other so closely and occurring in the same locality, should differ so radically in male sexual characters as to render any other assumption than that of a truly specific status quite untenable, is most remarkable; the condition exists, however, in many other parts of the Coleoptera, such as *Reichenbachius* and *Lachnosterna*, and serves to point a moral against such hasty verdicts concerning specific identity as seem to be the fashion in many quarters.

Group IV.

Subgenus **Dorcasina** nov.

The coloration and style of ornamentation are as constant through the four species of this subgenus as among the members of the preceding group, the body, legs and antennæ being pale, the elytra each with a cloud-like rounded black spot externally near

the middle. The sculpture is generally rather fine and dense, but becomes coarser in the Atlantic coast species, which differ also in their more slender form and more slender antennæ, which are less opaque near the base. The prothorax is campanulate, with the basal angles laterally prominent and acute in the western species, but not at all so in the Atlantic species; the sides are sometimes prominent medially. The vestiture is very short throughout, a little longer and less erect on the prothorax of the eastern representatives. The species so far as known to me may be thus defined in brief, *matthewsi* being the type:

Species of the Pacific coast, stout, the prothorax strongly campanulate; lustre rather dull almost throughout.....2

Species of the Atlantic coast, more slender, the prothorax less campanulate, broadly rounded to obtusely angulate at the sides but with the basal angles not at all prominent; antennæ more slender, not opaque throughout.....3

2—Hind body shorter, the elytra very rapidly cuneiform (♂), or feebly so with more rounded sides (♀); head and prothorax finely, extremely densely punctate and dull, the elytra with moderately coarse, very close-set punctures, becoming fine apically, the apices obtuse, not evidently truncate, the angles all rounded; tarsi moderate, the posterior (♂) distinctly shorter than the tibiæ. Length (♂) 10.0–14.0, (♀) 12.0 mm.; width (♂) 3.2–4.8, (♀) 4.4 mm. California (Sta. Cruz Co.).....**matthewsi** Lec.

Hind body more elongate, the size larger, the male antennæ still more elongate, more than one-half longer than the body, the last joint 4 mm. in length in the type, the fifth 2.6 mm.; prothorax more strongly and distinctly punctate, the punctures dense but becoming well separated medially, except anteriorly, the surface feebly and broadly impressed along the middle from about the centre to the broad apical constriction; elytra longer, more gradually cuneiform (♂), or less cuneiform, with slightly arcuate sides posteriorly and much broader (♀); the punctures nearly similar but less close-set; tarsi much longer, the posterior (♂) as long as the tibiæ, or distinctly shorter (♀). Length (♂) 14.6, (♀) 17.0 mm.; width (♂) 4.8, (♀) 6.2 mm. California (Gualala, Mendocino Co.).....**macrocera** n. sp.

3—Body moderately slender, convex, somewhat shining, pale luteous throughout, excepting a small blackish external medial spot on each elytron and the head, which is piceous and densely, rugosely punctate, the tempora broadly rounded and transverse, more parallel near the eyes; antennæ about a fourth longer than the body, slender and filiform; prothorax barely as long as wide, moderately narrowed at apex, rounded on the sides, biconstricted, the surface somewhat channeled medially between the constrictions, the punctures rather coarse, sparse, uneven in distribution; elytra only moderately cuneiform, rather obtuse at apex, the truncatures sharply defined and

slightly oblique; punctures coarse and close-set, becoming small apically; supplementary apical dorsal segment very broadly arcuato-truncate and obtuse. Length (♂) 11.0 mm.; width 3.6 mm. Pennsylvania..... **biforis** Newm.

Body still more slender, with the elytra more rapidly cuneiform, more acute at apex, with nearly similar truncatures; color pale luteous, the metasternum blackish, the prothorax mottled blackish and dusky rufous, the head black and the elytral spots as in *biforis;* head densely, subrugosely punctate, the tempora subangulate; antennæ not quite so long and rather more slender; prothorax nearly similar but narrower, longer than wide; elytra as coarsely but much less closely punctate; supplementary segment, behind the last dorsal, obtusely but abruptly lobed at the middle of its hind margin; abdomen densely punctulate though rather less densely than in *biforis.* Length (♂) 9.8 mm.; width 3.0 mm. New York (Bluff Point on Lake Champlain)..... **laurentica** n. sp.

It would be almost a certainty that *Lept. gnathoides* of LeConte, belongs to this subgenus, were it not that the antennæ seem too short and heavy; in coloration it agrees with the four species above assigned to it.

Group V.

Subgenus **Trachysida** nov.

This subgenus, which is very isolated in the general habitus of the body, due to the slender form, truncated conical or trapezoidal prothorax and prevalence of dense subasperate sculpture, contains at present, so far as known to me, but three species, *mutabilis* Newm., and *aspera* and *pedalis* of LeConte. *Mutabilis*—the type of the subgenus—is composite, as we have it in our collections, but as the forms are closely allied, large and carefully collected series will be necessary before coming to any definite conclusion. One pair from Marquette, Mich., in my collection, for instance, is of larger size and rather thicker neck than another pair from Bayfield, Wisc.; another, a female, from Wales, Maine, has looser punctuation, a transverse prothorax, very thick neck and fuller tempora than any other, and finally, a good series from Framingham, Mass., given me by C. A. Frost is of smaller size, shorter form and more pubescent prothorax in the male. The elytra may be entirely pale or black in all of these subdivisions, this being an asexual peculiarity as in *Leptacmœops. Quadricollis* of LeConte, also probably enters this subgenus but I have not seen it.

Bellamira Lec.

Although placed as a subgenus of *Strangalia* by Aurivillius, *Bellamira* is I think more correctly a distinct genus. It truly bears a strong superficial resemblance to *Ophistomis* (*Strangalina* Auriv. pars), but an inspection of the front of the head shows a complete dissimilarity, the front before the antennæ being very broad and but little extended, not at all like the narrow produced form characterizing *Ophistomis*. The antennæ, apparently devoid of sensitive pits, ally it more closely with the true *Strangalia*, but the deeply biconstricted prothorax is strikingly different; finally, this singularly composite genus in its male sexual characters displays a complete analogy with our *Ophistomis virilis*, *famelica* and *acuminata*. The genus was represented by *Leptura scalaris* Say alone, until recently (Bull. Bk. Inst., I, p. 342), when Schaeffer added *antennata*, from Arizona.

Typocerus Lec.

This genus was also reduced to the status of a subgenus of *Strangalia* by the author mentioned, but also unnecessarily, as it differs in habitus, type of ornamentation and in possessing a very elaborate system of poriferous sensitive areas on the outer antennal joints. These sensitive impressions or fossæ differ markedly in the sexes, being less extended in the female. Besides the well known *zebra* and *velutinus* of Olivier, the genus will comprise, of described species, *lunatus* Fabr., *badius* and *sinuatus* Newm., *lugubris* Say, *sparsus* and *brunnicornis* of LeConte, and *balteatus* Horn. *Badius* is a Florida species of peculiar appearance, which is extremely rare and local and *balteatus* Horn, is widely distinct in general appearance, having yellow elytra with narrow transverse fasciæ of darker tint; both these species are still desiderata in my collection, but there is a good series of *balteatus* in the collection of the National Museum. The two following species are very distinct in their male sexual characters:

Typocerus confluens n. sp.—Form and size somewhat as in *velutinus*, but more elongate, black, the elytra with the base, nubilously enclosing a more sharply paler subscutellar spot and two transverse series, each composed of two moderate spots, the inner sometimes wanting and sometimes larger, tending to unite with the outer and rarely with themselves along the suture, and a small subapical spot, all pale yellow and rather sharply defined on the black ground; legs pale, the tarsi and tibiæ for

the most part black; head finely, very densely punctate; antennæ black, two-thirds as long as the body (♂), with the outer sensitive areas smaller and feebler than usual, being half to three-fourths as long as the joints, or half as long as the body (♀), with the sensitive areas small and basal; prothorax nearly as in *velutinus*, convex, the punctures rather small, well separated, closer anteriorly; elytra elongate, cuneiform, less so and with more rounded sides in the female, deeply and conspicuously though not coarsely punctate, the punctures well separated basally, becoming very close and a little smaller distally, the apices narrowly and scarcely obliquely truncate, the outer angle not prolonged. Length (♂ ♀) 11.5–13.0 mm.; width 4.0–4.5 mm. Kansas and Colorado.

The fifth ventral in the male is somewhat tumid and has a large and very deep apical excavation, limited by acutely elevated sides posteriorly and extending to basal third, gradually narrowing and becoming extinct. The female is much less abundantly taken than the male, as usual in the genus.

Typocerus caligans n. sp.—Form narrower (♂) or stouter (♀) than in the preceding, rufo-testaceous, the under surface and tarsi picescent; vestiture pale and, as in the preceding, sparser than in *velutinus*, not so concealing the thoracic surface; head less finely, closely but more irregularly punctate than in the preceding, the antennæ blackish, gradually pale basally, strongly serrate distally (♂) and with the sensitive areas paler in tint and very distinct, two-thirds as long as the body, or (♀) shorter though otherwise similar, incrassate and serrate distally, with the sensitive spots smaller; prothorax nearly similar; elytra narrow and elongate-cuneiform (♂), or very broad, with more rounded sides (♀), very feebly subobliquely truncate at the tips, red-brown in color, with scarcely any maculation (♂), or with three nubilously paler bands and basal area (♀), the two medial uniting on the suture. Length (♂) 11.0, (♀) 13.5 mm.; width (♂) 3.9, (♀) 4.7 mm. Kansas.

The male sexual modification of the fifth ventral is nearly as in *confluens*, except that the very deep pit is shorter, not extending behind the middle, more abruptly ending and with similarly elevated side walls posteriorly. It differs from *confluens* in color, in the greater sexual disparity in size and outline and notably in the more incrassate distal part of the antennæ in both sexes.

In nearly all collections *velutinus* is represented by a rather heterogeneous lot of material, and I have made an attempt, recorded below, as far as my own is concerned, to segregate the specimens into what appear to be distinct species; they differ among themselves quite evidently in the form of the elytral apices, extent of the antennal sensitive spaces, degree and extent of maculation, sculpture of the prothorax and other features and may be known as follows:

Elytral apices feebly oblique, acutely bidenticulate, the outer tooth not much prolonged; form moderately stout, convex, black, the elytra, abdomen and legs red-brown, the tarsi infuscate apically, the four paler elytral fasciæ nearly always distinct and well developed though interrupted medially; head very finely, closely punctulate, with coarse punctures intermingled basally; antennæ black, moderately slender, only very feebly serrulate and not incrassate distally; prothorax campanulate, convex, with distinct and evenly distributed punctures, mingled with some coarse punctures on the flanks posteriorly, the vestiture coarse, golden, decumbent and close but not dense, except in the apical and basal constrictions; elytra rapidly cuneiform (♂), or feebly so and less rectilinear at the sides (♀), finely, not densely but strongly punctulate, the hairs stiff, short, fuscous or pale according to the ground tint; male with the fifth ventral canalicularly and distinctly impressed distally, elongate, rounded at tip, the abdomen gradually deflexed apically. Length (♂ ♀) 10.0–12.0 mm.; width 3.0–4.4 mm. Massachusetts, Pennsylvania, Kansas and Wisconsin (Bayfield). Very abundant.
velutinus Oliv.

Elytral apices narrower and extremely oblique, the outer angle much prolonged and very acute; elytral maculation always less developed. 2

2—Prothorax evenly campanulate, nearly as in *velutinus* but narrower; body narrower and more elongate, similar in coloration, except that the tarsi are almost wholly black; pubescence nearly similar; head nearly similar, the deep black antennæ longer, being four-fifths as long as the body (♂), much more strongly serrate distally and with the sensitive areas more oval and less linear; prothorax finely punctate, with coarser punctures intermingled throughout, giving a more fasciculate appearance to the pubescence, very coarse throughout on the flanks; elytra narrower, strongly cuneiform, with the paler fasciæ almost always feeble, the second invariably wanting, sometimes without trace of maculation, except the small subapical spot, which is the most constant of all; punctuation nearly similar, the short stiff pubescence always paler and fulvous; male with the fifth ventral never having more than a trace of apical impression. Length (♂ ♀) 9.8–11.8 mm.; width 2.9–3.9 mm. Massachusetts, New Jersey and Pennsylvania. Abundant.....**acuticauda** n. sp.

Prothorax inflated anteriorly, being there about as wide as it is just before the basal angles and rapidly narrowing to the apical constriction; coloration and vestiture as in the preceding; head similar but larger, the eyes more widely separated; antennæ similar but with the sensitive areas less defined and not paler in color or silvery; prothorax larger and more elongate, sculptured and clothed nearly as in *acuticauda;* elytra similar and strongly cuneiform but much less distinctly exceeding the prothorax in width, uniformly darker red-brown, without trace of maculation at any part in the type, the sculpture and vestiture similar; fifth male ventral nearly as in *acuticauda.* Length (♂) 11.8 mm.; width 3.6 mm. A single example, without indication of locality, from the Levette collection.
thoracicus n. sp.

The larger head and prothorax, the latter more elongate and more parallel, owing to the anterior inflation, impart to the type of *thoracicus* a very different appearance from any other of the numerous examples of *velutinus* and *acuticauda* at hand, although this may not be apparent from the description.

Ophistomis Thoms.

Strangalia Lec. nec Serv.; *Strangalina* Auriv. (pars).

On comparing a typical *Ophistomis* from Brazil, *fulvicornis* Bates, received from that author, with our North American series, I can find no decided difference and conclude that our species should be recorded under that name, rather than *Strangalina* Auriv., even though the European type of the latter should be generically the same as ours.* The hind tarsi are missing in the example of *fulvicornis* referred to, but I have no doubt that the third joint is slender and cylindric in form. This notably slender, cylindric, apically feebly emarginate form of the third hind tarsal joint, distinguishes our species from *Leptura* and *Acmæops* and serves also as one of the characters separating them from *Bellamira*, where the third joint is broad and truly bilobed, besides the biconstricted prothorax of the latter genus. The minute fourth joint at the base of what is really the fifth, is often very distinct. The antennal poriferous depressions become somewhat more inconstant here than in *Typocerus*, these being very deep and acutely defined in *texana*, very shallow though evident in *sexnotata* and obsolete in the female of *montana* and very minute in the male—three species otherwise evidently allied. *Montana* is not by any means a variety of *sexnotata*, having pale incrassate antennæ. The following are new forms more or less recently received, which can be interpolated readily in the table of LeConte (Sm. Misc. Coll., 264, p. 211); the first two are related to *sexnotata* Hald., but have pale antennæ, not, however, incrassate and compact distally as they are in *montana*.

*Some of the Mexican species figured by Bates, such as *picticornis*, *belti*, *histrio*, *lachrymans*, *felix* and *saltator*, are faithful reproductions, in general habitus, of our northern species of the usual *virilis* and *luteicornis* type, but others, such as *nigrella*, *fulveola* and *pallida*, will necessitate at least another genus, the peculiarly attenuated, laterally sinuate form of the elytra, not possessed by these latter species, being one of the generic peculiarities of *Ophistomis*.

Ophistomis texana n. sp.—Form and ornamentation as in *sexnotata*, but with finer and closer thoracic sculpture, the elytral punctures also somewhat less coarse; head nearly similar; antennæ rather more slender and elongate and not deep black but always pale in color throughout, not infuscate or stouter distally as they are in *montana*, the poriferous spaces of the last four joints (♂) oval, only slightly elongate, deep and sharply defined, minute on the preceding joint, or (♀) very much smaller, deep though less acutely defined; prothorax longer than wide, closely, moderately strongly sculptured and immaculate; elytra as in *sexnotata*, the sutural angle at apex being wholly obliterated, the sutural edge evenly rounding outwardly to the very acute tip; male with the terminal impression of the slender pale last ventral deep and large, rounded; legs very slender. Length—to tips of elytra (♂ ♀) 10.0–12.0 mm.; width 2.5–3.0 mm. Texas (locality unrecorded).

In the male of *sexnotata*, the terminal impression of the last ventral is much smaller and feebler and the poriferous spaces of the outer antennal joints are longer, being a little less than half as long as the joints, very shallow and not so sharply defined as in *texana*. The elytral maculation is sharply defined and deep black in the female, but is faded out more or less in the male, a character not noted in *sexnotata* or the following:

Ophistomis evanescens n. sp.—Nearly similar to the preceding in sculpture and coloration but rather more slender, the prothorax, especially, being narrower and much longer than wide, differing particularly in the antennæ, which have the first five joints dusky testaceous, sparsely and inconspicuously pubescent, the remainder abruptly pale flavate throughout and with the short vestiture coarse, dense, very pale and notably different and also differing in having the fifth male ventral less elongate, more convex and with the terminal impression almost completely obsolete; elytral markings deep black in the male and as in *sexnotata*, the acute apices also as in that species and *texana;* legs pale throughout as in *texana* and not bicolored as they are in *sexnotata;* tarsi piceous-black distally. Length (♂) 9.5 mm.; width 2.4 mm. Texas (Harris Co.).

In the male of *texana* the last dorsal segment is a little wider and has the sides feebly arcuate, while in *evanescens* this segment, though similarly pale in color, has the sides feebly converging and straight; in both, there is a very small supplementary segment behind the segment referred to, which in *texana* is more strongly rounded at tip than in *evanescens*.

The three following species are allied to *luteicornis*, having the elytral apices obliquely truncate and with evident sutural angles but without the swollen male abdominal apex of *virilis* and *famelica:*

Ophistomis eversa n. sp.—Form, coloration and sculpture nearly as in *luteicornis*, except that the elytra are slightly more abbreviated, dehiscent at apex through a greater extent and without the black suture, the post-basal spots but rarely transversely united and, so far as known, only in the female and the black humeral spot not extending to the scutellum, the pronotal black vittæ similar but without more than a trace of the two large approximate occipital black spots of that species, the legs long, very slender, pale throughout, except the black apex of the hind femora—also as in *luteicornis;* head and antennæ (♂) nearly similar, except that the sensitive areas of the sides of the outer joints are less extended, the elongate apical and small basal areas of each joint widely separated whereas in *luteicornis* these areas are larger and very approximate. Length (♂ ♀) 9.0–11.0 mm.; width 2.2–2.8 mm. Illinois. Four examples.

The male channel-like concavity of the last ventral is as in *luteicornis*. The external sinuous outline of the posterior part of the elytra is more pronounced than in that species, but, having in mind the general mutual resemblance, especially in the peculiar coloration of the legs, it is quite possible that *eversa* should not have higher rank than a subspecies. In *eversa* the elytral spots are rounded within and but rarely attain the suture, the latter being almost universally the case in *luteicornis;* the latter species is represented in my collection by a large series from Pennsylvania.

Ophistomis carolinæ n. sp.—General organization and fine close sculpture as in *luteicornis*, but stouter and with the long slender legs pale throughout; head differing greatly in having the eyes smaller and the very retracted tempora behind them more evident, tumid and less oblique; antennæ very slender, piceous-black throughout, the feeble sensitive areas of the outer joints narrow, not occupying more than apical half, the basal areolæ of the preceding extremely small, feeble and obsolescent; two black occipital spots of *luteicornis* well developed; prothorax as in that species, except that the two discal vittæ are very fine; elytra broader, less curved or dehiscent apically, pale throughout, except a rounded sub-median discal spot and a feeble cloud at apical fourth, the sutural bead black only basally; male having the apical concavity of the last ventral much shorter, prolonged anteriorly to near the base by a narrower and still feebler evanescent impression. Length (♂) 10.5 mm.; width 2.6 mm. South Carolina.

This is without doubt specifically distinct from *luteicornis;* it differs in coloration of the elytra, legs and antennæ, as well as in the stouter form, larger tempora and in the male ventral characters. In *luteicornis* and *eversa* the entire under surface is pale, while in *carolinæ* the under surface is wholly deep black, except the abdomen, which is bright red.

Ophistomis ochreipennis n. sp.—Much shorter in form than *luteicornis*, the fine sculpture nearly similar but much less dense on the prothorax, pale ferruginous, the basal part of the head broadly black from eye to eye; prothorax (♂) bivittate with black as in that species, without trace of vittæ (♀); elytra pale ferruginous throughout, except the sutural and external entire black beading and a nubilous fuscous indefinite area near apical fourth; anterior legs pale, with piceous tarsi, the intermediate with nubilously black femoral and tibial apices and wholly deep black tarsi, the posterior black, the tibiæ gradually pale basally and the femora pale, with blackish apex; head as in *luteicornis*, except that the eyes are not so developed, the tempora larger, though similarly very oblique and arcuate; antennæ very slender, deep black throughout, the sensitive areas as in *eversa;* prothorax formed nearly as in that species; elytra notably short, barely two and one-half times as long as the prothorax (♂) and less than three times as long (♀), very narrow, sinuous and everted distally as in *eversa;* abdomen wholly deep black above and beneath throughout, the concavity of the last ventral (♂) much more extended than in *luteicornis* or *eversa*, extending, decreasingly though deeply, to the extreme base; female larger and stouter than the male, the black abdomen becoming faintly refuscent at apex above and beneath. Length (♂ ♀) 9.5–11.5 mm.; width 2.4–3.2 mm. Unlabeled in the Levette collection.

This species is widely distinct from *luteicornis* or any of the preceding, though belonging to the same group; its habitat is unfortunately not known, but perhaps may be Colorado, Indiana or Florida in order of likelihood. The following is closely allied to *bicolor*, of which it may possibly prove to be rather a geographic subspecies than a distinct species:

Ophistomis simulans n. sp.—Coloration and sculpture, male sexual characters and general habitus throughout almost exactly as in *bicolor*, but it differs in its relatively broader and much less elongate elytra, the outer apical angle of which is much less prolonged and less acute, also in having the two sensitive areas of the outer male antennal joints virtually contiguous, whereas in *bicolor* they are well separated throughout on the somewhat more elongate outer joints. Length (♂ ♀) 10.3–11.3 mm.; width 2.3–2.5 mm. Colorado. Levette collection.

Placed side by side, the two series of examples, six of *bicolor* and four of *simulans*, can be observed to differ decidedly in form and size, but that is all that can be said conclusively at present, except in regard to the antennal characters mentioned.

Subfamily LAMIINÆ.

The transition from the preceding groups to such compact bulky forms as many of the Lamiids, is too abrupt and it would be better to have the Clytini form the pre-Lamiid group of the Cerambycinæ.

In fact, some of the forms placed near the head of the Lamiinæ by LeConte and Horn, such as *Cyrtinus* and *Psenocerus* might better be transferred to the Clytini, where the type species were originally placed by Haldeman and Say respectively. The species described by the writer as *Psenocerus tristis*, afterwards suppressed by Hamilton, is by no means the same as *supernotatus* or even a subspecies; it is abundantly distinct in outline, structure and habitus and should be rehabilitated. There is another species of the genus in my collection from Tamaulipas, Mex.

Tribe DORCADIONINI.

Ipochus Lec.

This is one of the very few American types representing the extremely numerous and diversified *Dorcadion* and *Parmena* of the old world; it is a very local development, confined to the coast regions of southern California and is moderately rich in species; it is allied very closely to *Parmena*, differing almost solely in the absence of lateral thoracic prominences; the type of elytral vestiture seems to be the same in both. The species in my cabinet may be recognized as follows:

Elytral punctures simple; last ventral segment of the male broadly arcuato-truncate and simple at apex.....2

Elytral punctures more or less evidently asperate; last ventral strongly margined medially at apex in the male.....7

2—Prostrate hairs of the elytra long and usually denser.....3

Prostrate hairs very much shorter and generally distinctly sparser....4

3—Fasciæ of the elytra white, narrow; vestiture of the prothorax not conspicuously dense, having the four small clusters of white hairs very distinct; body rather narrow, very convex, the elytral humeri moderately impressed; antennæ as long as the body; erect hairs very numerous, white and blackish intermingled. Length (♂) 6.5 mm.; width 2.1 mm. California (near San Diego),—Ricksecker. **hispidus** n. sp.

Fasciæ yellowish, the posterior very broad, equalling nearly half the elytral length, its anterior limit sharply biserrate, the subbasal fascia narrow; vestiture of the prothorax very dense, pale brown and conspicuous, the four pale points evident; antennæ (♀) nearly as long as the body, gradually and feebly tapering; erect hairs relatively less abundant than in the preceding; prothorax decidedly transverse, not as wide at base as at apex. Length (♀) 8.0 mm.; width 3.3 mm. California (near San Diego),—Dunn.....**pubescens** Csy.

4—Prothorax (♀) rather strongly transverse, somewhat hexagonal, the sides being very broadly angulate medially; body piceous in color,

small, unusually abbreviated and with the two elytral fasciæ much less widely separated, this distance on the suture being less than half the elytral length; the fasciæ are yellowish in color; antennæ fully as long as the body; erect hairs long and numerous; elytral humeri barely at all impressed. Length (♀) 4.7 mm.; width 1.8 mm. California (without further indication of locality).... **parvulus** n. sp.

Prothorax (♀) but slightly or not wider than long, rounded at the sides, the latter thence more converging and straighter to the base than to the apex.....5

5—Prothorax (♂) as long as wide, globular; size very small, narrow, rather densely dusky-pubescent throughout, except the small pronotal points and very narrow imperfect elytral fasciæ, which are whitish, the erect hairs long and abundant, those of the elytra a third as long as the width of the latter; antennæ (♂) rather stout, not longer than the body; elytral humeri barely impressed, with the coarse punctures confined to a subbasal transverse series. Length (♂) 5.0 mm.; width 1.4 mm. California (Los Angeles Co.).

globicollis n. sp.

Prothorax (♂) not quite as long as wide and not so nearly globular, being more broadly truncate at apex.....6

6—Prothorax uniformly punctured throughout, legs stout, the hind femora (♀) not quite twice as long as the tarsi; male slender, with the prothorax slightly wider than the elytra; female larger and very much stouter, with the prothorax narrower than the elytra; antennæ differing scarcely at all sexually, though relatively a little longer in the male; minute punctulation of the elytral ground dense, the larger punctures notably coarse in both sexes; humeri rather feebly impressed. Length (♂ ♀) 6.3–7.8 mm.; width 2.0–3.3 mm. California (Los Angeles Co.).....**subnitidus** Csy.

Prothorax less evenly punctured, less closely so medially; minute punctulation of the elytra much less dense and still more minute than in *subnitidus*, the elytra shorter and with the punctures notably smaller and still sparser, the surface more shining, the white fasciæ distinct though rather narrow and entire, biarcuate; humeri deeply and conspicuously impressed; legs nearly similar. Length (♂ ♀) 5.7–7.0 mm.; width 2.2–2.8 mm. California (near San Diego),—Ricksecker; also taken by the writer at San Diego.....**fasciatus** Lec.

7—Elytral punctures feebly asperate; body of the usual form and color, narrow in the male but with the prothorax scarcely as wide as the elytra, dark piceous, rather shining, the prostrate vestiture very short, the larger punctures sparse, coarse on the prothorax, much smaller on the elytra, the humeri feebly impressed; antennæ as long as the body, feebly tapering; pronotal fascicules distinct, the elytral fasciæ narrow and unusually approximate, being separated by less than half the elytral length, the anterior less basal than usual. Length (♂) 5.2–6.0 mm.; width 1.7–2.0 mm. California (Monterey). Shaken from the Monterey Pine by the writer.

pinicola n. sp.

Elytral punctures rather coarser and very strongly asperate throughout; body moderately stout, similar in color; prothorax (♀) equal in

width to the elytra, distinctly transverse, rounded and inflated at the sides before the middle, coarsely, sparsely punctate, the punctures granuliferous, the four spots large, yellow, somewhat diffused, the elytral fasciæ narrow, rather diffused, yellowish, the humeri not in the least impressed; antennæ (♀) fully as long as the body; depressed pubescence throughout the body short, not at all dense or conspicuous, the surface shining. Length (♀) 6.8 mm.; width 2.6 mm. California (Island of Santa Catalina),—Fall...**catalinæ** n. sp.

There is a general similarity of habitus, form and color pervading all the modifications of *Ipochus* above noted, so that they have been neglected hitherto and all considered as *fasciatus* Lec., without any sort of discriminative investigation so far as recorded. A closer study reveals considerable diversity however, and I have but little doubt of the validity of the species named in the table. They are generally arboreal in habits and not epigeal as stated by LeConte and Horn.

It is probable that the Mexican *Parmena villosa* of Bates, is closely allied to *Ipochus*, but the sculpture of the body seems to be different.

Moneilema Say.

Monilema Lec. et Horn.

The species of this genus are numerous though frequently closely allied, and they are but slightly diversified in structural characters as a rule; there are probably fifty or more represented in cabinets, but only very few, having more salient and striking distinctive features, have been described. Those present in my collection may be defined as follows:*

Subgenus **Moneilema** in sp.

First antennal joint acute externally at apex; basal joint of the hind tarsi more elongate; anterior parts smaller when compared with the hind body.

Antennal joints three to five or six annulate with white pubescence....2
Antennal joint four alone annulate with white; body much larger; prothorax without trace of lateral tubercle.....5
2—Pronotum barely at all punctured except near the base.....3

* I have followed Say in giving the specific names the feminine ending, harmonizing with the general rule for Latin words of whatever derivation ending in *a*, and as observed in *Lema* of the Chrysomelidæ. The recorded measurements of length extend only to the tips of the elytra.

Pronotum equally but very sparsely and irregularly punctured throughout 4

3—Form stouter, the elytra barely at all narrower at base than near the middle, black, glabrous, the prothorax sometimes dusky rufous; annulation of the antennæ moderately marked; prothorax rather strongly transverse, the lateral tubercle short and very broad though angulate; elytra only about one-half longer than wide, narrowed behind, moderately obtuse at apex, the surface with large irregular anastomosing furrows and coarse sparse punctures, denser and rougher on the inflexed sides basally and all obsolescent apically. Length (♂ ♀) 14.0–18.5 mm.; width 5.8–8.2 mm. Kansas. . . **annulata** Say

Form more slender, with relatively smaller anterior parts and more inflated and convex hind body, deeper black throughout, not glabrous, the elytra with very minute ashy hairs, which are condensed in a broad lateral streak from the middle to the apex, the exposed tip of the last dorsal segment (♂) also densely clothed with ashy pubescence, which becomes very minute and sparser (♀); antennæ with the ashy annuli very conspicuous; prothorax but little wider than long, the lateral tubercle small, obtusely pointed; elytra inflated medially, more strongly narrowed posteriorly to the still more narrowly obtuse apex, distinctly narrower at base than at the middle; surface shining, obtusely corrugated in wavy lines, the punctures large but feeble, sparse, much stronger, dense and asperate on the basal parts of the inflexed flanks; tarsi more slender than in any other species, also shorter than in the preceding. Length (♂ ♀) 13.5–15.5 mm.; width 5.8–7.0 mm. Kansas (Hamilton Co.) and Colorado. **nubecula** n. sp.

A—Form, coloration and lustre as in *nubecula*, the rugæ of the elytra more obsolete and the punctures of the inflexed flanks larger and less asperate, the small ashy hairs of the elytra only visible in the depressions in the type, the last dorsal (♂) with the hairs, though dense, much more minute and less conspicuous; antennæ apparently much more obscurely annulate; last ventral segment (♂) more broadly sinuate at tip. Length (♂) 13.8 mm.; width 6.0 mm. Kansas (locality unrecorded) . . . . . **demissa** n. subsp.

4—Body more elongate than in the preceding and forming part properly the following group, deep black, alutaceous, shining, glabrous at the sides and beneath as in all the following species; antennal joints three to six annulate but imperfectly on the fifth and sixth; prothorax very nearly as long as wide, subinflated at the sides near the apex and very slightly wider there than at base, the sides feebly and broadly undulated, without trace of tubercle; scutellum broadly triangular, very minutely, evenly punctulate and with very fine decumbent hairs; elytra four-fifths longer than wide, evenly oval, convex, the sides slightly prominent basally; surface with a peculiar system of fine and rapidly waving, feeble impressed lines and, to slightly behind the middle, with rather small but deep and perforate sparse punctures, which, on the flanks basally, become very coarse, dense and asperulate; male with the fifth ventral rufescent, broadly

but rather strongly sinuate at tip. Length (♂) 17.2 mm.; width 6.7 mm. New Mexico (Luna).....**cylindricollis** n. sp.

5—Punctures of the basal part of the inflexed elytral flanks large, rather close-set and very strongly graniferous; body very elongate, deep black, shining, entire front finely and rather closely but unevenly punctate; antennæ less than three-fifths as long as the body, the annulus of the fourth joint very sharply defined, not attaining the base; prothorax nearly as in *cylindricollis*, except that there are very few fine, irregularly dispersed punctures, these a little larger and somewhat more numerous basally but of the same character as the others; elytra rather more than twice as long as wide, smooth, oval, more pointed behind, convex but with the upper limit of the flanks very sharply defined nearly to the middle; surface smooth but with faint vestiges of rapidly wavy longitudinal lines laterally, the punctures fine and sparse, not extending to the middle; last dorsal red; fifth ventral (♂) rufescent at tip, broadly, distinctly sinuate; femora (♂) unusually rapidly and very strongly clavate apically. Length (♂) 23.0 mm.; width 9.0 mm. Arizona (Douglas),—Snow. **microsticta** n. sp.

Punctures of the basal parts of the inflexed elytral flanks coarse but sparse and not graniferous.....6

6—Elytra very moderately convex, widest distinctly before the middle, thence gradually narrowing posteriorly, the sides arcuate throughout; body stout, piceous-black, rather large, shining; front with fine scattered punctures laterally; antennæ (♂) half as long as the body; prothorax larger than usual, slightly wider than long, the sides parallel and straight, converging slightly near apex and base; punctures very fine and extremely sparse, larger and more numerous near the base, perforate; elytra abruptly declivous along a prominent though blunt line to rather behind the middle, two-thirds longer than wide, smooth, with faint longitudinal inequalities, the punctures small and scattered in basal two-fifths; femora (♂) very much inflated, the fifth ventral rufescent, broadly. distinctly sinuate, with a broad and flat marginal bead; last dorsal red. Length (♂) 25.0 mm.; width 10.8 mm. Western Texas.....**appressa** Lec.

Elytra strongly convex, the delimiting line of the flanks much less prominent, broadly rounded in transverse section as a rule, almost evenly elliptic in outline and widest at about the middle; size smaller and narrower; elytra with shallow and wavy, approximate furrows, the body black to piceous-black, the last dorsal red throughout; lustre subopaque or slightly shining; front with a very few fine punctures near the sides; antennæ two-thirds as long as the body; prothorax nearly as long as wide, much smaller than in *appressa*, the sides undulated, subconstricted near the base; punctures very fine and extremely few in number even near the base, where they are but slightly less minute; elytra twice as long as wide, the punctures fine and very sparse, only present in basal fourth, the flanks not less opaque and with the moderately large punctures sparse even basally, the line of flexure broadly convex (♀), more sharply defined (♂); femora much inflated distally (♂) and rather stouter than usual

in the female. Length (♂ ♀) 20.0–23.5 mm.; width 8.0–9.3 mm. Arizona (probably southern),—Levette.....**corrugans** n. sp.

A—Nearly as in *corrugans* but smaller and with less elongate hind body, this being (♂) three-fourths longer than wide, black, densely alutaceous; prothorax similarly small but with the stronger punctures near the base much larger; elytra more obtuse at apex, similar in sculpture, the last dorsal not red but black, rufescent at the apical margin; fifth ventral more narrowly sinuate at tip, the femora less strongly inflated than in the male of *corrugans*. Length (♂) 18.0 mm.; width 7.8 mm. Arizona (probably southern),—Levette.....**ovipennis** n. subsp.

In *corrugans* the form is much narrower and more convex than in *appressa*, but the longitudinal corrugations of the elytra are occasionally obsolete, the surface becoming smooth. *Ovipennis* is probably rather a species than a subspecies, the habitus being evidently different.

Subgenus **Collapteryx** Newm.

First antennal joint not mucronate at tip; basal joint of the hind tarsi shorter, though longer than wide as a rule; anterior parts relatively more developed.

Prothorax with a spiniform projection at each side just behind the middle; fourth antennal joint alone annulated.....2

Prothorax not spinose but with a feeble tubercle at each side, which is sometimes almost wholly obsolete; antennæ generally as in the preceding.....8

2—The lateral spine well developed, very acute and projecting more or less upward and backward; body larger.....3

The lateral spine very short, sometimes but little more than a tubercle, though always distinguishable as a spine.....7

3—Annulus of the fourth antennal joint broad, extending from the base to about the middle.....4

Annulus of the fourth joint short, not extending to the base.....5

4—Body more slender than usual and with much smaller and less developed anterior parts, shining; antennæ gradually tapering, clothed densely with gray decumbent pubescence and fully two-thirds as long as the body; prothorax nearly as long as wide, not three-fifths as wide as the elytra, distinctly constricted just behind the spine, having widely scattered coarse and smaller punctures, which basally, become very coarse and rather close; elytra not quite twice as long as wide, moderately convex, the lateral line of flexure prominent and rather acute; punctures coarse, few in number, arranged in very irregular series, in basal third suturally, to the middle laterally, the deflexed flanks with coarse sparse asperate punctures in nearly basal half; abdomen shining, the minute decumbent hairs close

and evident, the fifth segment (♂) with the feeble apical sinus narrower than usual, about a third as wide as the base; femora with the minute punctulation feeble and not dense. Length (♂) 22.0 mm.; width 8.4 mm. Arizona (locality unrecorded).

constricta n. sp.

Body more parallel, the anterior parts more developed, the surface less polished; antennæ fully three-fourths as long as the body, the dense pubescence pale chocolate-brown; prothorax fully three-fourths as wide as the elytra in the male, more transverse than in the preceding and not subbasally constricted, nearly similarly and coarsely, deeply punctate but with the minute close punctulation stronger; scutellum sharply triangular, with rather distinct pubescence, which is parted along the middle, much more acutely angulate and less transverse than in *constricta;* elytra oblong-oval, nearly twice as long as wide, convex, the line of flexure much more obtuse than in the preceding, the punctures coarse, sparse, extending behind the middle both suturally and externally, those on the flanks not differing but those along the line of flexure crowded and rugose basally; fifth ventral (♂) very much broader at apex, the barely at all sinuate truncature more than half as wide as the base; femora with the minute punctulation very strong, dense and conspicuous. Length (♂) 24.0 mm.; width 9.3 mm. Utah (locality unrecorded) ..... **uteana** n. sp.

5—Spine at each side of the prothorax subhorizontal, though slightly oblique as usual, unusually long, slender and subparallel, one-fourth as long as the thoracic length; surface very shining; antennæ gradually tapering as usual, the minute dense vestiture plumbeous-bluish; prothorax nearly as long as wide, having rather small and widely scattered punctures, with some coarser intermingled anteriorly and close and very coarse near the basal margin; elytra convex, oval, very broadly obtuse at apex, the coarse punctures very sparse, irregularly subserial to somewhat behind the middle, coarse and asperate on the flanks and rather closer there basally than above; lateral line of flexure obtuse, coarsely, closely punctate; punctulation of the shining femora fine, not dense, with some fine punctures rather sparsely intermingled and several coarser and very remote; hairs on the strongly and closely punctulate abdomen gray and extremely minute, scarcely visible. Length (♀) 26.5 mm.; width 10.4 mm. Arizona (Tucson),—Snow ..... **pimalis** n. sp.

Spine at the sides of the prothorax shorter, rapidly acuminate and extending more upward in obliquity, not more than a fifth or sixth as long as the thoracic length 6

6—Prothorax but slightly wider than long and much narrower than the elytra in the male, relatively smaller (♀); surface shining; antennæ fully two-thirds as long as the body, with dark grayish vestiture, the four basal joints stout, those beyond abruptly much more slender; prothorax with very few small or moderate punctures but with many very coarse punctures scattered near the base; scutellum notably pubescent, with broad glabrous line; elytra strongly convex, oval, nearly twice as long as wide, with moderately acute and distinct line of flexure basally, the punctures coarse, sparse, extending in

very irregular series to behind the middle, very sparse on the flanks; abdomen closely clothed with very small, decumbent but obvious brownish hairs, the sinuato-truncate apex of the fifth segment (♂) more than one-half as wide as the base; minute punctulation of the femora extremely fine and not conspicuous and bearing extremely minute hairs. Length (♂ ♀) 24.0–27.8 mm.; width 8.9–11.4 mm. Arizona (probably southern)..... **spinicollis** Csy.

Prothorax much larger, transverse, very nearly as wide as the elytra in the male; surface shining; antennæ stout, gradually and evenly tapering, the fifth joint not abruptly much narrower than the fourth, the dense hairs dark brown; prothorax punctured as in the preceding; elytra oblong, the sides parallel and barely arcuate, narrowing behind to the broadly obtuse apex, very convex, the line of flexure abrupt, rather acutely marked and coarsely punctate; punctures sparse, coarse, becoming more uniform basally, extending sublinearly to the middle, very coarse, numerous and graniferous basally on the flanks; punctures even coarser and more numerous throughout the thoracic flanks than in *spinicollis;* abdominal vestiture excessively minute, fine and scarcely discoverable, the sinuato-truncate apex of the fifth segment (♂) fully one-half as wide as the base; femora without discoverable hairs though minutely, strongly punctulate. Length (♂) 25.0 mm.; width 9.7 mm. Southern Arizona.

pollens n. sp.

7—Form rather stout, very shining, the legs faintly picescent; antennæ slender, two-thirds as long as the body, densely clothed with red-brown pubescence, without evident annulation of any kind in the type; prothorax slightly transverse, much narrower than the elytra, swollen at the sides near the apex, the spine small but acute and distinct; surface very minutely, not densely punctulate, with evenly distributed minute punctures everywhere intermingled, near the apex and toward base with rather coarse deep sparse and perforate punctures; elytra oval, rather more tapering behind to the obtuse apex, three-fourths longer than wide, moderately convex, with short interrupted flexuous and feebly impressed broad lines, and a few coarse punctures, not extending to the middle suturally, but more numerous and extending to apical fourth laterally, the line of flexure obtuse, the flanks with very coarse punctures and gradually coarser simple deep foveæ basally; broad even sinus of the fifth ventral (♂) half as wide as the base; femora very minutely, not densely punctulate, with very fine punctules everywhere intermingled. Length (♂) 21.0 mm.; width 8.0 mm. New Mexico.

simplicicornis n. sp.

A—Somewhat similar to the above but less lustrous, with more elongate-oval, much more convex elytra, nearly twice as long as wide, on which the line of flexure at the sides is almost completely obsolete, the surface with very fine and faint sinuous lines, impunctate except a few moderate and sparse punctures near the sides, those of the flanks scarcely half as large as in the preceding and very sparse; prothorax and antennæ similar, except that the former is much

smaller in the female type, in part due to sex; legs rufo-piceous. Length (♀) 21.5 mm.; width 8.0 mm. New Mexico.

grylliceps n. subsp.

Form more elongate and less ventricose, highly polished, the legs black and concolorous; antennæ similarly slender and apparently not at all annulate; prothorax distinctly shorter and rather strongly transverse, not swollen on the flanks subapically, the spine still smaller, more obtuse and more tuberculiform; sculpture nearly similar, except that the minute punctulation is much less close and the coarse punctures extend less far from the apical and basal margins; flanks coarsely punctured in apical half and near the base; scutellum broadly rounded, sparsely micro-punctulate; elytra narrower, more oblong, with feebly arcuate sides, feebly narrowing posteriorly to the relatively broader apex, about twice as long as wide, a fourth wider than the prothorax, very convex, the line of flexure notably obtuse; punctures very coarse, deep, numerous, extending nearly to apical third, not differing on the flanks, except that they become still coarser basally though simple, with the surface more irregular and extend, near the sides, almost to the elytral tips, the surface above smooth, without elongate impressions; under surface and legs nearly similar; female in every way as in the male but with the anterior parts less developed, the sides of the elytra more arcuate and, as usual, with the femora much less inflated. Length (♂♀) 19.5–20.5 mm.; width 7.2–7.8 mm. Colorado.....**rector** n. sp.

8—Antennæ smooth, never more than sparsely punctate, rather slender; upper surface of the body in great part smooth.....9

Antennæ coarsely and rugosely punctured, very stout, not annulate; body more or less rugose and punctured throughout.....12

9—Thoracic tubercles situated at basal third, erect and very distinct though obtuse at tip. Body broadly oblong-oval, convex, rather shining, deep black and glabrous; head sparsely punctate almost throughout; antennæ gradually tapering, not annulate, the fourth joint with merely a small white patch beneath at base in the type; prothorax strongly transverse, three-fourths as wide as the elytra, the sides slightly converging basally and apically from the tubercle; surface with scattered larger and smaller punctures and a rather even single line of coarse punctures near the base; scutellum very short and extremely transverse, puberulent, without broad median parting; elytra oblong-oval, nearly straight and parallel basally, rounding and rapidly narrowing posteriorly to the broadly obtuse apex, the line of flexure basally very obtuse, coarsely punctate; surface with feeble confused vermiculiform sculpture, the microgranulation dense and strong; punctures coarse, deep, wanting near the median line of each elytron nearly to the base, extending suturally and laterally nearly to the middle, very coarse and extremely deep, rather close and very conspicuous on the flanks; legs shorter than usual, the femora rugulose and evidently though not densely punctate. Length (♀) 23.0 mm.; width 9.6 mm. Mexico (Durango City),—Wickham.....***pleuralis** n. sp.

Thoracic tubercles behind the middle as usual but before basal third . . 10

10—Tubercles wholly vestigial, represented by feeble broad swelling of the surface, which is not at all acute. Body stout, subparallel, the prothorax very large, more than three-fourths as wide as the elytra (♂) and about as long as wide; antennæ very finely tapering, the fourth joint annulate with white in basal half or more; prothorax very convex, the median line striate for a short distance behind the centre, minutely, not densely, uniformly punctate, with an area of coarse punctures toward base and narrowly along the apex; elytra oblong, feebly narrowing behind to the extremely broad, arcuate apex, rather convex, one-half longer than wide, with many irregular anastomosing creases and some coarse punctures, numerous on and near the obtuse line of flexure to apical fourth, also in an irregular line near outer third and another, still broader, near inner fourth, from the base nearly to the middle, the flanks with numerous coarse asperulate punctures from base to behind the middle; hind femora peculiarly sculptured, having very minute, sparse and feeble punctulation, with rather sparse fine punctures intermingled to apical fourth, where, along a line which is advanced axially, the punctulation becomes abruptly much stronger and very dense; fifth ventral (♂) very broadly sinuato-truncate and strongly beaded at apex. Length (♂) 22.0–25.0 mm.; width 8.6–10.2 mm. Texas (El Paso),—Dunn.
solida n. sp.

Tubercles very small but acute and distinct 11

11—Form, coloration and lustre nearly as in *solida*, the antennæ similar, the prothorax similar in its subquadrate form and in sculpture but relatively a little smaller, much narrower than the elytra, the median line finely striate and with a large feeble indentation slightly behind the centre; scutellum differing considerably, being much less transverse and nearly equilatero-triangular; elytra narrower and more elongate, four-fifths longer than wide, more convex, smooth, the creases of the preceding not visible, except near the base, where they are more longitudinal; punctures coarse and rather close-set on and near the line of flexure to apical third, almost completely wanting elsewhere, except a single widely spaced line very near the suture for a short distance behind the scutellum; the lower part of the line of flexure is free from punctures and those of the flanks are coarse but everywhere widely separated, extending inferiorly to apical third; femora as in *solida*, the tarsi much shorter, with the basal joint much less elongate; fifth ventral (♂) still somewhat more broadly sinuate but more finely beaded at apex; female nearly similar to the male but more elongate, with relatively smaller prothorax and with the more slender femora evenly sculptured throughout. Length (♂ ♀) 22.0–24.5 mm.; width 9.2–9.7 mm. Texas (western).
femoralis n. sp.

Form much more slender, similarly shining but with the legs piceo-rufous; antennæ nearly similar, the annulus of the fourth joint shorter and less well marked; prothorax differing greatly in being much shorter and rather strongly transverse, the sculpture more obsolete, there being only a very few punctures near the apex and a single irregular line near the base, the small medial indentation being at basal

fourth; elytra nearly similar in form but still smoother, fully as convex, without creases or impressions of any sort and wholly without punctures, with exception of a sporadic one or two perhaps, except laterally near the obtusely prominent line of flexure in about basal half, where they are moderately coarse and very sparse, the punctures of the flanks few in number and only moderately coarse; legs more slender, the tarsi much narrower. Length (♀) 19.0–21.5 mm.; width 7.7–8.7 mm. New Mexico.....**lævigata** Bland

12—Moderately slender, very convex, more or less opaque above, more shining on the flanks and beneath; antennæ unusually short, very stout basally, rapidly tapering and without evident annulation; prothorax nearly as long as wide, slightly more narrowed at base than apex, the sides at the usual position of the tubercle slightly angulate but only obtusely prominent, the surface opaque, rugulose, finely punctate, gradually coarsely so basally, transversely plicate near the anterior margin, coarsely punctato-rugose throughout the less opaque flanks; elytra evenly oval, less than twice as long as wide, strongly convex, one-half wider than the prothorax, smoothly undulato-rugose throughout, feebly shining, and with moderately coarse, deep punctures, sparsely placed in the bottoms of the undulations from base to apical fourth, and, near the sides, very nearly to the tip, closer and still more asperate on the flanks, the surface more deeply rugose along and near the very obtuse line of flexure; abdomen more shining than the upper surface and with coarse, deep and well separated punctures, equally distributed over the entire surface, the fifth ventral (♂) broadly sinuate at tip; legs rather shining but rugulose, the very distinct punctures well separated and only moderately coarse, the minute punctulation equal and not dense throughout on the femora. Length (♂) 18.0 mm.; width 7.7 mm. A single male without indication of locality..**opaca** n. sp.

Opaca has long been in my collection under the name *subrugosa* Bland, but it does not agree with the description of that species, which is from Cape San Lucas. In *subrugosa*, for example, the fourth antennal joint is annulate with white, of which there is no trace in the well preserved type of *opaca*, and again, the coarse punctures near the base of the pronotum are not broadly "diffused" but confined to an irregular transverse line; finally, the abdomen in *subrugosa* is said to be finely punctured, more sparsely toward the sides. It is possible that *opaca* may inhabit some part of the Lower California Peninsula, but there is no record. *Solida* and *femoralis* are allied to *lævigata* but are of much heavier build, with larger and much more elongate prothorax. The type of *grylliceps*—the head throughout the genus, with its high vertical front, recalls strikingly the form of that part in the crickets and grasshoppers—has, on each

elytron, two very fine and subobsolete though rather sharply marked longitudinal raised threads.

Simplicicornis and *rector* are perhaps allied to *armata* Lec., and generally figure among the representatives of that species in collections; but, on consulting the original description of the type of *armata*, which was found by the Mexican Boundary Survey, it is evident that they cannot be identical with LeConte's species. The species just mentioned have the lateral thoracic spines so small as to be little more than acute tubercles and could never, in my opinion, have given rise to such a name as *armata;* they are also very much smaller in size, *armata*, in fact, being one of the largest species of the genus (1.25 inch or 31.2 mm). It is probable that the original type of *armata* has never been duplicated, and that the species is allied rather with the *gigas* group, but having more rugulose elytra. The species from *constricta* to *pollens* in the table, are allied more especially to *gigas* Lec., but are all materially smaller; furthermore in only one, *pimalis*, do the thoracic spines approach the development that they have in *gigas*, and in *pimalis* they are much more slender. The length of *gigas*, as given in the original description, is 37 mm. G. H. Horn (Trans. Am. Ent. Soc., 1885, p. 185) gives the length of *gigas* as somewhat less, that is 30–34 mm., all of which measurements are materially greater than any pertaining to the species of the group named above, which range from 22 to about 28 mm. Individuals of the same species do not vary so greatly in size in this genus.

The two subgeneric divisions adopted above on the recommendation of Dr. Horn (l. c.), are quite distinct in habitus, as may be observed very readily on segregating the groups, and possibly it would be better to give them generic rank, but there are no very sharply marked differences in the tarsi; in *solida*, for instance, the first joint of the posterior is nearly as long as the next two combined, but in the rather closely allied *femoralis* it is very much shorter, being only a little longer than wide; they are however always thicker in *Collapteryx* than *Moneilema* proper. The pads of dense pubescence on the soles of the tarsi offer comparatively little diversity of form or extent in the species here defined, and so no use has been made of a character that may, in certain aberrant forms such as *fortis* Lec., become very conspicuous.

The femora of the male are always much stouter than those of the female and strongly claviform, and the abdomen protrudes more behind the elytra in the latter, which differs also from the male in its more elongate form of body and relatively smaller prothorax; but I have noticed no decided differences otherwise, either in structure or sculpture, in those cases where the two sexes come from the same source and undoubtedly pertain to the same species. The very remarkable bipartite sculpture of the male femora, described above under *solida* and *femoralis*, does not seem to affect any other species of the genus.

Tribe MONOCHAMINI.

Monochamus Serv.

The elytral apices are notably variable in this genus between rather wide limits, but, with series at hand, several sufficiently obvious groups may be defined as below. In *scutellatus*, for example, the tips are never dentiform, but they vary from an acutely defined right angle at the suture to an even and rather broad arcuation; in *obtusus* all the examples at hand have the sutural angle well rounded, without trace of prominence; in *maculosus*, *oregonensis* and some others, there is, normally, an obtuse sutural prolongation, which may however be lost in certain individuals. The antennal joints in large males sometimes seem to be proportionally longer than in small examples, and there is considerable sculptural variability; for example in *notatus* Drury (*confusor* Kirby), the elytral punctures are well separated and not notably graniform, but, in one specimen before me from the Adirondacks, these become very strong and so dense as to produce a rugose aspect; much latitude for individual variation, therefore, has to be allowed, but notwithstanding this, the number of true species admitted by Dr. Horn is too small by several. Those which seem entitled to the specific status may be defined as follows:

Elytra with the sutural angle prolonged in a slender spine; body large, parallel (♀) or with cuneiform hind body (♂); color pale chocolate-brown, mottled with darker brown and white, especially dark near the base, laterally before the middle and in spots thence to the tip, a broken oblique white lateral fascia at basal fourth, another sometimes at the middle and a third always visible near apical fourth especially noticeable; punctures toward the humeri becoming moder-

ately dense and granuliform. Length (♂♀) 25.5–27.5 mm.; width 7.8–8.1 mm. Eastern North America as far south as Florida. **titillator** Fabr.

Elytra rounded at the apices, with a slender spine projecting posteriorly from the arcuation and not in prolongation of the suture. Body very much smaller and more slender than in the preceding; coloration and maculation nearly similar, the elytral punctures in long irregular series and with the two obtusely raised lines of each elytron much more evident, the punctures toward the humeri as sparse as elsewhere and not, or scarcely at all, graniferous; prothorax very nearly as long as wide, the lateral tooth short and right angled, the central elevation strong; antennæ very slender, one-half longer than the body in the male; legs nearly similar but more slender. Length (♂) 18.5 mm.; width 5.1 mm. Texas..... **angusticollis** n. sp.

Elytra conjointly and broadly rounded at apex, each with an obtusely dentiform and more or less feeble sutural prolongation.....2

Elytra conjointly and broadly rounded at tip, the sutural angles never dentiform and in all but extreme cases notably rounded.....3

Elytra each obliquely prolonged apically and rather acute at apex; elytral maculation in large, solid and well defined masses.....4

2—Elytra in color and maculation almost exactly as in *titillator*, except that the two brown sublateral spots near basal third form a much more oblique line; sculpture differing conspicuously, the punctures toward the humeri becoming densely crowded and rugulose; body smaller in size and more slender, the basal joint of the antennæ more slender. Length (♀) 18.5–22.0 mm.; width 5.2–7.2 mm. Six females from Virginia and New Jersey. [*dentator* Fabr.; *minor* Lec.]. **carolinensis** Oliv.

Elytra in general scheme of maculation nearly as in *titillator* but blackish-brown, rarely paler brown; sculpture coarser and more rugose, more crowded toward the humeri, which are more prominently angular; body smaller, shorter, with more rapidly cuneiform elytra and somewhat less elongate antennæ, these being more or less nearly two and one-half times as long as the body in the male. Length (♂♀) 14.7–22.7 mm.; width 4.3–7.0 mm. Rocky Mountain regions of Colorado, New Mexico and Arizona. Abundant. [*clamator* Lec.]..... **maculosus** Hald.

Elytra in maculation nearly as in *maculosus* but shorter, much broader and more parallel in form and deep black in color; sculpture nearly similar but still coarser, closer and more rugose throughout. Length (♀) 15.5–23.5 mm.; width 4.8–7.8 mm. Sierra Nevada Mountains of California and Oregon..... **oregonensis** Lec.

Elytra as in *maculosus*, very rapidly cuneiform from the base, similarly sculptured but with the small spots of rusty brown tomentum more numerous; body very much larger in size; antennæ (♂) two and three-fourths times as long as the body, the basal joint much thicker than in *maculosus*, more finely and evenly punctured and clothed uniformly but not densely with short appressed white hairs, the fourth joint shorter than the third but about half as long as the elytra; entire vertical front of the head extremely densely punctate

and pubescent. Length (♂) 27.5 mm.; width 8.7 mm. Colorado,—Levette.....**strenuus** n. sp.

Elytra as in *maculosus* in form but more elongate, rapidly cuneiform (♂) or nearly parallel (♀), differing greatly in maculation, dark red-brown to blackish in color, with relatively small separated punctures, not denser though granuliform toward the humeri, clothed evenly but not very densely with very short, decumbent, ashy hairs, with small specks of blackish-brown tomentum sparsely intermingled, these being simply a reduced form of the darker spots in *maculosus* and *carolinensis*. as plainly shown occasionally by their oblique arrangement; prothorax relatively larger than usual and with strong, stout lateral spines, the central tubercle strong to almost obsolete. Length (♂♀) 24.0–30.0 mm.; width 6.6–8.4 mm. Wisconsin, Indiana and New York. [*confusor* Kirby].....**notatus** Drury

3—Body pure red-brown in color and of short, broad, parallel form, somewhat as in *oregonensis* in outline but much smaller; elytra with sculpture and maculation nearly as in *maculosus*, but with the punctures in the larger patches of whitish uniform hairs, which separate the spots of dense dark brown tomentum, much larger and more isolated, the surface not so rugose except near the humeri; antennæ much shorter, three-fourths longer than the body (♂) or but little longer than the latter (♀). Length (♂♀) 14.2–20.0 mm.; width 4.2–6.8 mm. California (Siskiyou Co.)...**obtusus** Csy.

Body deep black in color, slightly shining but never having metallic gloss, moderately elongate, stouter than in *scutellatus*, the elytra strongly cuneiform (♂) or nearly parallel (♀), the punctures coarse and everywhere very dense, forming transverse rugæ, the vestiture consisting of short decumbent and unevenly distributed dark brown hairs, with small spots of dense white hairs intermingled; antennæ (♂) rather less than two and one-half times as long as the body, uniformly black, or (♀) slightly longer than the body, black, with white annuli at the bases of the joints. Length (♂♀) 15.0–24.0 mm.; width 4.6–7.8 mm. Rocky Mountains of Montana and Colorado to northern Oregon.....**monticola** n. sp.

Body deep black but generally with more or less distinct subæneous lustre, highly polished; outline narrower, slightly more elongate; elytra less rapidly or strongly cuneiform, parallel in the female, the punctures rather coarse but much shallower and less close-set than in *monticola* and forming transverse rugulation only on parts of the surface; antennæ (♂) barely twice as long as the body, or (♀) similar to the preceding but with the white basal annuli feebler. Length (♂♀) 14.8–22.0 mm.; width 4.5–6.9 mm. Maine to Wisconsin (Bayfield). [*resutor* Kirby; *mutator* Lec.]....**scutellatus** Say

4—Body more elongate than in any except certain females of *carolinensis*, parallel in the female, the integuments nearly black, the elytra nudely showing in certain small spots, mingled with the large dense patches of white and ochreous-yellow tomentum, which are arranged in broad ragged oblique lateral fasciæ, somewhat as in *titillator* and *maculosus*, the external outline gradually rounding and narrowing behind and produced subacutely at the tips, the punctures not coarse,

isolated as a rule, coarse, close and rugose basally; antennæ very slender, pale in color, barely at all longer than the body in the female. Length (♀) 24.5 mm.; width 7.0 mm. Wisconsin (Bayfield),—Wickham. [*marmoratus* Rand., *fautor* Lec., and *acutus* Lacord.].

marmorator Kirby

Clamator Lec., of which I have typical examples before me, does not differ in any way from *maculosus; strenuus* is very much larger than any example of a large series of *maculosus* at hand from various localities and, having in view the longer antennæ, with very stout and evenly sculptured basal joint, very densely sculptured front and other characters, I believe that it will prove to be specifically different; if not it can readily be reduced to the status of a subspecies or variety. *Obtusus*, which has been suppressed in the catalogue, is a widely isolated species; it differs from related forms in the scutellum, among many other features, this being completely glabrous, excepting a few hairs at base, in all six of the well preserved examples in my collection; they were collected by Mr. Koebele. *Angusticollis* is peculiar in its small size, very narrow form, feebly developed thoracic spines, sculpture of the elytra and very short male antennæ. *Resutor* Kirby and *mutator* Lec., were described from the regions about Lake Superior and are unquestionably the common eastern *scutellatus* of Say; so it is certain that the evidently different and much stouter, very much more densely sculptured mountain form, named *monticola* above, has not been described hitherto but mingled in collections with *scutellatus;* when carefully segregated the differences become very obvious. In associating *mutator* with *maculosus* and *oregonensis* with *scutellatus* Dr. Horn (Tr. Am. Ent. Soc., 1885, p. 193) has exactly reversed the reality, *mutator* being a synonym of *scutellatus* and *oregonensis* a valid species near *maculosus;* it is in no way related to *scutellatus*.

Ptychodes Serv.

This genus is introduced merely to state that the species we have been calling *vittatus* Fabr., is *trilineatus* Linn., as determined by Bates in the "Biologia." The opportunity is further taken, however, to state that the Arizona species described by the writer under the name *abbreviatus* and arbitrarily suppressed in our catalogue, is based upon a well preserved example—but female and not male. On again comparing it with three females of *trilineatus* from

Louisiana and Texas, it is observed to differ not only in the form of the sutural white vitta, which is limited to a very short space just behind the scutellum and continued thence to the apex by the ordinary small brown hairs of the rest of the surface, showing that this is in no sense an effect of denudation, but in its decidedly longer antennæ, more cuneiform elytra, with larger condensations of yellow tomentum and distinctly narrower truncature of the fifth ventral segment. I have no hesitation in adhering to my original opinion in regard to its specific status.

Hammoderus Thoms.

The following species differs from any *Goes* in its very stout form of body, much longer basal joint of the antennæ, which is smooth and only finely pubescent, the hairs closely decumbent, and in the broader tarsi:

Hammoderus amplipennis n. sp.—Very stout, the elytra subparallel, piceous-black in ground color, clothed closely above with short coarse yellowish-cinereous hairs, which, on the elytra, are interspersed with numerous sparse and evenly distributed small points of denser hairs of the same color, the under surface very densely clothed with slightly longer and more whitish hairs, sprinkled thickly with nude points about certain punctures which bear each a longer erect hair; head basally and the pronotum with strong and very dense, rugose punctuation; antennæ in the type very slender, only slightly longer than the body, clothed densely with yellowish and closely recumbent pubescence, with only a very few short bristles along the lower surface of the basal joints, the joints one to five more or less denuded along their upper surface, the first joint long, shorter than the third but longer than the fourth and much longer than the prothorax, the latter short and strongly transverse, with well developed spines; scutellum densely clothed with yellowish pubescence, not at all parted; elytra large, twice as long as wide, together broadly rounded at apex, the sutural angles rounded, having small, apically fine, separated punctures, coarser and strongly granose basally; fifth ventral broadly sinuate at tip, with obtusely rounded angles; legs and tarsi minutely, thickly pubescent, the tibiæ in part denuded. Length 29.0 mm.; width 10.0 mm. Colorado,—Levette.

Differs from *tessellatus* Hald., from Georgia, which also belongs to this genus, in its larger size and stouter form, also in the smaller and more uniformly distributed points of denser elytral vestiture; these are formed each about a single puncture, which however does not seem to differ much from the other punctures and does not bear a longer hair. The type is probably a female.

Goes Lec.

This genus is easily distinguished from the preceding by the much shorter and more hairy basal joint of the antennæ, which is generally scarcely more than twice as long as wide, and sometimes less, and always much shorter than the fourth joint as in *Ptychodes;* also in the less obese form of the body and less dilated, though similarly well developed tarsi; the antennæ are but little longer than the body even in the male; the type of elytral ornamentation is the broadly, indefinitely and generally very brokenly fasciate, sometimes becoming faintly nubilous or virtually uniform. We have the following five or six species, of which *tigrinus* is the generic type:

Scutellar vestiture broadly parted by a glabrous impressed line, which broadens basally. Body moderately stout, piceous-black, the elytral vestiture very short, dense, white, mingled with smaller dark brown areas which are very irregular, somewhat nubilously defined and forming two broad broken fasciæ, one near basal fourth, the other more oblique and before apical fourth; antennæ pale, the tips of the joints black, the basal joint black, the bristling black hairs only visible beneath and sparse; punctures of the head and prothorax very fine, sparse. Length (♀) 25.5 mm.; width 8.0 mm. Pennsylvania. [*tomentosus* Zieg.]..... **tigrinus** DeG.

A—Nearly similar, the shorter elytra being partially due to sex in the single type, more nearly black in color, the dark mottling of the elytra exceeding in area the white and more sharply defined than in the preceding, the punctures rather coarse and more irregularly disposed, having certain small impunctate areas near the base; scutellum narrower; antennæ darker, the basal joint bristling with erect setæ through a much greater part of its circumference; punctures of the head coarser, those of the pronotum mingled with coarse and sparse punctures. Length (♂) 23.0 mm.; width 7.1 mm. Texas..... **marmoratus** n. subsp.

Scutellar vestiture not or only very finely parted along the middle....2

2—Larger species, always over 15 mm. in length, the elytral vestiture bicolored or approximately so.....3

Small species, the elytral vestiture tricolored.....5

3—Form stouter, blackish-brown, the elytra densely clothed with very short ochreous hairs, becoming very slightly more yellow apically, having the basal fifth of the length and a broad and rather sharply defined solid transverse fascia at apical third, which is interrupted at the suture, very dark umber-brown; antennæ very pale, slender, the basal joint dark brown, herissate sparsely almost throughout; punctures rather strong and close on the occiput, smaller and close on the prothorax, coarser, less close and basally graniferous on the elytra. Length (♂♀) 17.0–25.0 mm.; width 5.2–7.5 mm. Pennsylvania and Wisconsin..... **pulcher** Hald.

Form more slender, the elytral fasciæ extremely nubilous and faint or wanting 4

4—Color pale reddish-brown throughout; antennæ very pale, with the basal joint not decidedly darker and bristling throughout with stiff short setæ; punctures of the head rather strong, deep and moderately close, of the prothorax slightly smaller and dense, of the elytra rather coarse, well separated, becoming rugose toward the humeri, the vestiture of the elytra very short, rather coarse, dense, feebly and indefinitely mottled with pale brown, almost entirely so basally, and with a very feebly defined entire transverse fascia of the same near posterior third. Length (♀) 20.7 mm.; width 5.9 mm. New Jersey ..... **pulverulentus** Hald.

Color darker brown, the prothorax and legs partially blackish; antennæ very pale, with the basal joint much darker and more evenly and sparsely punctate and pubescent than in the preceding; head strongly, very deeply and closely punctate throughout; prothorax more strongly and deeply punctate than in *pulverulentus* and with two small subanterior ill-defined areas, which are less coarsely, densely punctured and not visible in that species; scutellum more impressed medially; elytra with coarser and perforate, less widely spaced punctures, denser posteriorly, more feebly rugose at the humeri, clothed more sparsely but more evenly throughout with short whitish pubescence, which is everywhere faintly mottled with more condensed irregular spots of the same tint; tarsi but feebly dilated. Length (♂) 18.0 mm.; width 5.2 mm. New York (Bluff Point, Lake Champlain). **laurenticus** n. sp.

5—Form rather narrow, convex, densely punctate, the punctures of the elytra well separated and in part subserial in arrangement, blackish, the hind body, legs and antennæ throughout pale, the basal joint pubescent and moderately herissate; head, prothorax and nearly posterior third of the elytra with dense uneven yellow pubescence, the remainder of the elytra with white and dark brown pubescence, the latter forming two uneven broad fasciæ, near basal third and just behind the middle; tarsi slender. Length (♂ ♀) 11.5–12.3 mm.; width 3.2–3.6 mm. Illinois and Pennsylvania (the elytral punctures closer and less serial in the latter example) ..... **debilis** Lec.

There is a distinct difference in elytral punctuation between the western males of *debilis* at hand and the single old and more or less imperfect male from Pennsylvania, but there is not sufficient material upon which to form any certain opinion. The single male of *laurenticus* was obtained by the writer by beating from some low bushy trees near Plattsburg, during the past summer; it has quite a different general habitus from *pulverulentus*, due to its smaller size, coarser and closer elytral punctures and more uniform vestiture.

Microgoes n. gen.

The type of this proposed new genus is *Goes oculatus* of LeConte. It differs from *Goes* in the small size of the body, different type of elytral ornamentation, smaller and still more slender tarsi and, more especially, in the very long and filiform antennæ, which are often much more than twice as long as the body. These differential characters are far more important than those separating the well known tropical genera *Hammoderus*, *Tæniotes* and *Deliathis;* for, in addition to those given above, the eyes are very much reduced in size in *Microgoes*. The two species in my cabinet may be separated as follows:

Black throughout the body, legs and antennæ, the elytra sometimes feebly picescent, the entire aspect cinereous however, because of the rather close and even, though finely and vermicularly disintegrated, clothing of short cinereous hairs, each elytron with a rounded eye-like spot of black or blackish hairs at three-fifths from the base on the median line; pubescence beneath and on the legs dense, uniform and cinereous-white; antennæ (♀) very slender, not quite twice as long as the body, the basal joint rather slender, nearly three times as long as wide but not as long as the fourth joint, all clothed with decumbent ashy hairs, not densely placed and not herissate beneath; prothorax extremely densely, confusedly and rather finely punctato-rugose and opaque, the spine acute; scutellum semicircular, densely pubescent; elytra moderately elongate, much more than twice as long as wide, narrowing arcuately behind in nearly apical third, the apices rounded; elytral punctures moderately coarse, deep, close-set and asperulate. Length (♀) 9.7–11.0 mm.; width 3.0–3.4 mm. New York..... **oculatus** Lec.

Black, the general aspect more intensely black than in the preceding, owing to the much less dense cinereous vestiture, which rather sparsely but irregularly speckles the elytra, the eye-like spots of the latter in the same position but very much less sharply defined; general form and sculpture similar but with the elytra much less elongate, being not evidently more than twice as long as wide in either sex; antennæ similarly very slender and filiform and even longer, being nearly two and one-half times as long as the body in both sexes, semi-nude throughout, the ashy decumbent hairs being very much sparser than in *oculatus;* whitish hairs of the under surface, and especially of the legs, much less dense; male with the fifth ventral but little longer than the fourth, very broadly truncate, this segment in the female being fully one-half longer than the fourth and more narrowly truncate at tip. Length (♂♀) 8.7–10.3 mm.; width 2.8–3.0 mm. Pennsylvania (Westmoreland Co.),—Schmitt. **tenuicornis** n. sp.

I have seen no account of the food habits of these species, which do not seem to be very common in collections.

Tribe MESOSINI.

Synaphœta Lec.

The species of this genus are of broad and rather flattened form, remindful of certain of the Acanthoderes, but with narrower and more cylindric prothorax; the elytra have two sinuous black or brown fasciæ from the lateral margins before and behind the middle, the fasciæ but very seldom crossing, though frequently nearly attaining, the suture. The antennæ are more or less nearly one-half longer than the body in the male and only very little longer than the body in the female; they are comparatively stout basally and are fringed beneath with long hairs, dense in the male or sparser in the female; the basal joint is long and obconic. The prothorax is bilineate with black or brown and obtusely tuberculate at the sides behind the middle. The species in my collection seem to be four in number as follows:

Humeri of the elytra very prominent and protuberant. Body of rather large size, black throughout, clothed not very densely with gray decumbent hairs mixed with some clusters that are fulvous, this being especially evident at the margins of the black lines and fasciæ, these more nearly attaining the suture than in any other; antennæ sparsely ashy-pubescent, the joints densely cinereous at base, their surface throughout very minutely, closely punctulate, mingled on the basal joint with sparse and moderately large, perforate punctures, becoming dense and coarsely rugose beneath; head throughout with moderate, sparse perforate punctures, in addition to the minute close punctulation; prothorax but little wider than the head, two-thirds wider than long, slightly uneven, sparsely punctate; scutellum with blackish pubescence, fulvous along the middle, more broadly basally; elytra three-fifths longer than wide, nearly one-half wider than the prothorax, the sides broadly sigmoid; apices broadly rounded; flanks abruptly vertical along an obtuse line; surface coarsely, not densely punctate, the punctures becoming very strongly tuberculiferous basally; line along the suture rather elevated; male with the fifth ventral short, broadly rounded, with a narrow and rather sharply defined median sinus. Length (♂) 21.0 mm.; width across the humeri 9.6 mm. California (locality unrecorded).
humeralis n. sp.

Humeri of the elytra not or only very slightly prominent.....2

2—Elytral punctures almost as coarse as in the preceding but less coarsely tuberculate basally; body smaller, narrower, similarly clothed and maculate with black, except that the ante-median fascia is more broken internally, does not extend so far toward the suture and, more especially, is flexed forward at the sides nearly to the humeri, the post-median finely attaining the suture in a V-shaped line,

also flexed at the sides but backward, the punctures forming still more conspicuous black dots throughout; head much more coarsely and closely perforato-punctate, the antennæ very much more slender and filiform, the basal joint shorter and not so stout but more rugosely sculptured, the ashy basal bands of the remaining joints even more dense and conspicuous; prothorax not quite so transverse, coarsely punctate; scutellum with the median fulvous stripe more parallel; elytra longer, nearly three-fourths longer than wide, the sides straighter and more parallel, very broadly rounding at apex; under surface and legs with ashy pubescence, variegated with small blackish spots, especially on the femora; fifth male ventral as in the preceding but rather more narrowly rounded, the sinus equally sharply marked. Length (♂) 15.5 mm.; width 7.0 mm. California (Tulare Co.).....**annulata** n. sp.

Elytral punctures relatively much finer though distinct, sparse; antennæ similarly annulate, the tibiæ in the same way uniannulate.....3

3—Body very broad, feebly convex, clothed and maculate nearly as in *humeralis*, except that the fasciæ and pronotal vittæ are brownish-black and the ashy hairs of the elytra are more intermingled with fulvous and more divaricately oblique in arrangement, especially near two marked longitudinal impressions of each elytron, which are not so evident in any other species; head with moderately coarse, deep and rather close-set perforate punctures, about twice as numerous as in *humeralis*, the antennæ relatively longer and less stout, with the basal joint shorter, less stout, more punctured and rugose and, especially, with different vestiture, the hairs being coarser, longer and denser and more conspicuously intermingled with brownish; prothorax still less transverse, one-half wider than long, the lateral tubercle still less elevated and more obtuse; scutellum as in *annulata;* elytra much shorter, barely more than one-half longer than wide, the sides subparallel, the punctures sparse, becoming granose basally throughout; fifth male ventral short, very broadly rounded, very indefinitely subtruncate medially and without trace of the median sinus of the two preceding species. Length (♂) 18.0 mm.; width 8.2 mm. California (near San Francisco).....**guexi** Lec.

Body much narrower, smaller in size, similar in vestiture and maculation but with the fasciæ and vittæ deep velvety-black and narrower than usual; prothorax shorter than in any other, very nearly twice as wide as long, the lateral tubercles less broadly obtuse than in the others; scutellum as in the preceding; elytra parallel, together semicircularly rounded at tip, with fine but strong, sparse punctures, which do not become at all graniform basally, except near the humeri; under surface and legs with more fulvous than cinereous hairs. Length (♀) 12.7 mm.; width 5.4 mm. California (locality unrecorded).....**brevicollis** n. sp.

The head and prothorax in *humeralis* are distinctly broader and more massive than in *guexi*, and the radical differences in the sexual modifications of the fifth male ventral will readily serve to distin-

guish the latter from either *humeralis* or *annulata*. I am unable to say whether the brownish color of the pronotal vittæ and elytral fasciæ in my single representative of *guexi* is a permanent or accidental feature, but this is of slight moment. There are probably many other species of this genus on the Pacific coast, to which region it is narrowly restricted, but they all seem to be rather rare individually.

Tribe ACANTHODERINI.

The chief distinguishing feature of this tribe, besides the constantly strong acute lateral thoracic teeth or spines, is the clavate form of the first antennal joint; in this way it is markedly distinct from any of the Leiopi or Acanthocini which follow, and, though apparently not very important, it has here full tribal value. The species are generally stout in build, but in some groups they become more slender than some of the Acanthocini. The types of *Acanthoderes* as described by Lacordaire, are short thick trigonal forms, destitute of any kind of sculpture, with truncate elytral tips, peculiar sternal structure and with the antennæ of the male slightly longer than the body. This indicates that there are a number of distinct genera at present united under *Acanthoderes*, as could be assumed very readily on viewing the habital differences, for example, between *morrisi*, *quadrigibbus* and *funerarius*. These genera, so far as represented in the very limited material of my collection, excepting *Acanthoderes* which I have not seen, may be briefly defined as follows:

Prosternal and mesosternal processes broad, truncate, bituberculate on their opposing faces; elytra without trace of sculpture of any kind, trigonal, truncate at apex; antennæ (♂) sensibly longer than the body, or (♀) slightly shorter. [Type *Cerambyx daviesi* Swed.]. Colombia and Brazil. . . . . ***Acanthoderes**

Prosternal and mesosternal processes both rather steeply sloping, not prominently opposed, the former simple, the latter with a small juxta-coxal tubercle at each side; elytra strongly sculptured, frequently carinate, short, trigonal, truncate at the tips; antennæ as in *Acanthoderes*. [Type *Acanthocinus quadrigibbus* Say]. North and South America. . . . . **Psapharochrus**

Prosternal and mesosternal processes as in the preceding, rather broad, evenly sloping, both wholly devoid of tubercles; elytra short, parallel, together circularly rounded and perfectly entire at apex, smooth, finely punctate; antennæ much shorter than the body in both sexes,

stout, not annulated, the outer joints short and compactly joined. [Type *Acanthoderes funerarius* Bates]. Mexico and Central America.

***Pardalisia**

Prosternal and mesosternal processes differing from any of the preceding, narrower, the latter very gently sloping, perfectly simple; elytra elongate, very feebly cuneiform to subparallel, obliquely truncate at apex, nearly smooth, punctured, each with or without two feeble discal raised lines; antennæ as in *Acanthoderes* but slender, annulate; last dorsal segment of the abdomen (♀) produced slightly at apex as in the Acanthocinini, which is not the case in any of the preceding genera. [Type *Æ. decipiens* Hald.]. Eastern America.

Ægomorphus

ACANTHODERES Serv.—Limited so far as known to a few peculiar species of the northern part of South America, as stated by Lacordaire (Gen. Col., IX, 2, p. 753).

PARDALISIA n. gen.—The type of this genus, as stated above, is of isolated habitus in the present group, owing to the stout parallel form of the body, short thick compact antennæ, conjointly rounded elytral apices and type of ornamentation.

ÆGOMORPHUS Hald. (Dej. Cat.)—This is a very distinct genus, forming a bond between the Acanthoderini and Acanthocinini; so far as known to me, we have in the Atlantic regions of North America, to which it is probably confined, but two species—*decipiens* Hald., and *morrisi* Uhler. As this genus is valid it will be necessary to rename the genus *Ægomorphus* of Thomson (Essai, p. 336).

Psapharochrus Thoms.

Besides the described *quadrigibbus* Say, and *cornutus* Bates, which I have before me, this genus will include many other similar species from Mexico and Central and South America, among which the two following appear to have been as yet unannounced:

***Psapharochrus histrio** n. sp.—Form and ornamentation very much as in *quadrigibbus*, the elytral punctures sparse and stronger, involved in conspicuous black dots, which are absent in that species; body stout, rather convex, black, the vestiture fine, close, very short and dense, red-brown, variegated with some black maculation on the elytra, an irregular oblique discal spot, a small one slightly posterior and near the side and two small ones near the apex, on each, being evident; each elytron also with an oblique ochreo-cinereous sinuous fascia from the margin behind the humerus to about inner third, surrounded internally by a blackish border; head dark brown, with scattered small perforate punctures; antennal joints three and four each with two loose pale annuli, the remainder each with a single subbasal to basal annulus; prothorax

twice as wide as long, the lateral tooth very large, triangular and medial, the two dorsal tubercles strong, the median carina acute, wanting in basal half; punctures coarse, well separated; elytra triangular, with broadly rounded sides, three-fifths longer than wide, the apices sinuato-truncate, the outer angle acute but not much produced; inner elevated line evident medially, flexed outward and feeble though tuberculose basally, the outer line obsolete. Length (♀) 11.0 mm.; width 4.4 mm. Honduras.

It is rather singular that no Central American species seems to have been recorded by Bates, which can be said to be especially allied to *histrio*. It bears a very close general resemblance to *quadrigibbus* but has very much larger lateral thoracic teeth, which are not at all flexed forward at apex, as is related by Bates of *sylvanus*.

The following is allied in general appearance:

***Psapharochrus guatemalensis** n. sp.—Form stouter than in the preceding but almost identical in color and ornamentation; head similar in color and sculpture; antennæ similarly banded, piceous in color; prothorax shorter and broader, the lateral tooth similar, large and triangular, but not quite so large as in *histrio*, the dorsal tubercles strongly elevated, simple; medial carina less acute than in *histrio* but becoming obsolete only very near the base; punctures coarse and well separated; elytra similar but broader and more rounded at the sides, the oblique fascia longer, otherwise similar, except that the outer of the two dorsal lines is also evident medially; legs nearly similar, except that the tarsi are very much stouter. Length (♀) 13.8 mm.; width 6.0 mm. Guatemala (Villa Nueva, near the city).

If I am correct in considering the type of each of the above species as female, as would appear from the long and rather pointed fifth ventral, which is nearly similar in each, they are undoubtedly distinct; though so strikingly similar in ornamentation and sculpture, the differences in the tarsi are rather remarkable.

In this genus the second antennal joint becomes more elongate than in the preceding sections of the Lamiinæ.

Tribe ACANTHOCININI.

Lagochirus Erichs.

Lagocheirus Lac.

This is a large genus in the warmer regions of North and South America and the species are of very broad form, somewhat as in *Psapharochrus*, but more depressed and with the elytra usually less

rapidly cuneiform, though in *præcellens* Bates, they are as strongly trigonal and almost as convex as in any of that genus. Besides a good series of *araneiformis* and one each of *longipennis* and *præcellens* Bates, I have in my collection two other species, which are not identifiable with any of those recorded by Bates; these are the following:

***Lagochirus parvulus** n. sp.—Form much more parallel than in *araneiformis* and very much smaller in size, though almost similarly marked, the lateral elytral dark spot similar but more sinuate antero-internally, black, densely clothed throughout with pale brown vestiture, variegated but slightly, excepting the lateral dark area and a very few extremely faint posterior transversely wavy lines on the elytra; head dark, the sculpture concealed; antennæ (♂) very slender, unusually short, two-thirds longer than the body, evenly and densely ochreo-pubescent throughout, without trace of annulation and with the node of the sixth joint obsolete, represented by a glabrous convex spot; prothorax small, nearly twice as wide as long, nearly as in *araneiformis*, the elytra also similar, except that they are parallel, the punctures still more obsolescent apically; last dorsal segment much more narrowly rounded; legs shorter, the femora much more feebly clavate, the tarsi more slender, the anterior but slightly dilated and with short cilia; last ventral segment broadly, almost rectilinearly truncate. Length (♂) 11.0 mm.; width 4.6 mm. Panama (Natá).

Resembles very much an extremely small example of *araneiformis*, but parallel and with relative smaller prothorax and truncate, not broadly sinuate, apex of the fifth ventral segment.

***Lagochirus procerus** n. sp.—Form narrower and more elongate than *araneiformis*, blackish, densely clothed with very short whitish tomentum, the dark lateral spot of the elytra as in *araneiformis* but with much more extended white area behind the spot and between it and the distinct entire transverse dark fascia at apical fourth, which shades off gradually paler posteriorly and with its sharply marked anterior margin biangularly reëntrant; punctures sparse; fasciculi and granose basal ridges as in *araneiformis;* head similar, the antennæ (♂) slightly more slender and not uniformly clothed but with joints 1–3 finely mottled, 4–6 biannulate with cinereous, the node and erect seta similar on the sixth, the remaining joints with dense cinereous-white pubescence, solid on the outer joints, darker at base and apex on the seventh, diminishing on the following; prothorax similar but smaller; elytra more elongate, moderately cuneiform, three-fourths longer than wide; fifth ventral a little longer, more strongly rounded, with the median sinus narrower and very distinct; last dorsal broad, sinuate at apex, with rounded angles. Length (♂) 20.0 mm.; width 8.5 mm. Unlabeled, but probably from Lower California.

This species has long figured in my collection under the name

obsoletus Thoms., but on reading Mr. Bates' description of that form, I have no hesitation in announcing it as distinct; the posterior fascia is obsolete in *obsoletus* but is very pronounced in *procerus*.

Glaucotes n. gen.

The type of this proposed genus is *Leptostylus yuccavorus* Fall, from southern Arizona; it differs from *Leptostylus* in the smooth surface of the elytra, varied only by three very even and feebly elevated discal costules, more densely pubescent, vanishing basally and wholly devoid of clustered erect hairs of any kind; it also differs from any form of true *Leptostylus* in the rounded and not truncate elytral apices. Its general habitus is very different from any *Leptostylus*, although apparently not distinguished by structural peculiarities other than those mentioned. There are probably several species of *Glaucotes*, judging by my material.

Leptostylus Lec.

This is a very large and, as organized at present, not very sharply limited genus, of wide distribution in the North and South American continents; in the rather stout, roughly sculptured body it is somewhat intermediate between *Lagochirus* and the Leiopi. In this country it is most abundantly represented in Florida. The following apparently new species have come to light more or less recently:

Leptostylus lecontei n. sp.—Moderately stout, dark brown, clothed densely with luteo-cinereous vestiture, mottled with paler and darker areas; front between the eyes before the antennal prominences much wider than long; antennæ (♀) mottled, a third longer than the body; prothorax four-fifths wider than long, nearly as wide at apex as at base, the prominences moderate, broadly rounded; surface with a few small widely scattered punctures and more in transverse line at apex and base, also with five moderate tubercles, the vestiture uniform; elytra three-fifths longer than wide, much wider than the prothorax, the sides arcuately rounding, more so apically, to the transversely and sharply truncate apices, the humeri rather prominent; surface with small sparse penicillate black warts, some of which are on an oblique discal raised line at outer third, also darker in a large post-humeral lateral area, extending to the middle and obliquely truncate internally somewhat on the disk; also a fine oblique line on each just behind the middle, meeting the other on the suture and before which, and between it and the lateral dark area, the vestiture is whiter; also with two small dark, and two or three paler,

areas, behind the oblique fascia; femora strongly clavate. Length (♀) 10.0 mm.; width 4.1 mm. Florida (Lake Worth).

I do not know of any species closely allied to this; in general ornamentation it is somewhat as in *planidorsus*, but is much narrower and with more anterior position of the oblique fasciæ.

Leptostylus crescenticus n. sp.—Similar to the preceding in coloration and vestiture, but the body is narrower in form, the front quadrate, the prothorax more narrowed apically than basally and with only three tubercles, the outer posterior being obsolete; the elytra are similar but with the sparse punctures rather coarser, the arcuately oblique pale fasciæ more posterior and not margined behind with darker tint. Length (♀) 8.6 mm.; width 3.4 mm. Florida (Crescent City),—Schwarz.

For many years the type of this species has been in my collection under the name *collaris* Hald., but on reading the original description of *collaris*, I find the two do not agree in any important particular. The elytral truncatures are as sharply marked as in *lecontei*.

Leptostylus tæniatus n. sp.—Stout, oblong, convex, blackish-piceous, the minute dense and coarse vestiture cinereous, with small fulvous clusters of more erect hairs sparsely intermingled on the elytra, limited by a straight transverse even and densely white entire fascia at the summit of the declivity, the posterior parts like the anterior; front dark, a small yellowish spot at the centre; antennæ slender, barely longer than the body (♂), a little shorter (♀), the joints to the fifth strongly mottled brown and white, those beyond cinereous, all the joints black at tip; prothorax one-half wider than long, carinate medially and with a short oblique elevation at each side of the middle anteriorly, the sides obtusely tumid at the middle; vestiture concealing the sculpture, except an even transverse subbasal line of punctures; elytra parallel, rapidly oblique and moderately declivous behind, two-fifths wider than the prothorax, the tips narrowly arcuato-truncate, without sharp angles; two discal ridges uneven, distinct, fasciculato-spinulose, the outer bent outwardly near the base; punctures coarse, rather close but filled with the vestiture; femora clavate; tarsi rather short and slender throughout, the basal joint of the posterior not twice as long as wide. Length (♂♀) 8.4–10.8 mm.; width 3.6–4.5 mm. Florida (Lake Worth),—Kinzel.

Very distinct from any other of our known species, but its relationship with Cuban species cannot be stated at present; it was sent in considerable number.

Leptostylus divisus n. sp.—Narrower, more elongate and less convex, parallel, clothed densely with rather dark cinereous vestiture, becoming brown on the elytra behind an even posteriorly arcuate transverse line near posterior fourth, the coloration, sculpture and vestiture throughout

as in *aculifer;* antennæ a little longer than the body, slender, the scape long and notably thick; legs and tarsi as in *aculifer.* Length (♀) 11.2 mm.; width 4.2 mm. Texas.

Belongs near *aculifer* Say (*marginellus* Hald.) but larger, much more elongate, with a longer and thicker scape and with the outer antennal joints less rapidly abbreviated. In both sexes of *aculifer* the third antennal joint is as long as the last four combined, the antennæ being not longer than the body even in the male; in *divisus* they are much longer than the body in the female and probably still longer in the male, with the outer joints less rapidly shorter; the more basal joints are more strongly dilated at their apices. *Albescens* Hald., is a species widely distinct from *aculifer* in its larger size, denser and whiter vestiture, bifasciate with brown near the apex and much longer antennæ, these being nearly as in *divisus* but with more slender scape; the latter species is much more slender in bodily form; *albescens* has for a synonym *asperatus* Hald.

Leptostylus mutilus n. sp.—Form short, convex, dark piceous-brown, the integuments not concealed by the small and uniformly ochreous-brown hairs, which at certain parts are denser though of the same color throughout; head small, much narrower than the prothorax, not distinctly sculptured, the antennæ (♀) longer than the body, maculate with ochreous and brown; prothorax not quite twice as wide as long, the sides feebly rounded, only slightly more so and broadly arcuate medially, without any appearance of prominence or tubercle, the surface almost even, sparsely and rather finely punctate, with a transverse series of coarser punctures along the basal and apical constrictions, also having a small tubercle at each side of the middle anteriorly; elytra one-half longer than wide, much wider than the prothorax, parallel, rounding in apical third or fourth, the apices very narrowly and obliquely truncate, with obtuse but evident external angle, rather coarsely, deeply and sparsely punctate throughout, the surface with an oblique impression from near the humeri toward the suture, also with several uneven and slightly elevated lines, bearing clusters of denser hairs; femora strongly clavate; basal joint of the hind tarsi twice as long as wide. Length (♀) 7.0 mm.; width 3.2 mm. Florida (Key Largo).

This species is allied to *terræcolor* Horn, but is shorter in form, with relatively smaller head and prothorax and much more narrowly truncate elytra.

***Leptostylus batesi** nom. nov.—This name is proposed for the Central American *Leptostylus albescens* Bates (Biol. Cent. Amer. Col., V, p. 387) which is preoccupied by Haldeman for a distinctly valid American species, hitherto suppressed as a synonym of *aculifer* Say, as stated above.

Astylidius n. gen.

This generic name is proposed for certain small species, hitherto placed in *Leptostylus*, but which differ in the smaller, more acute and subangulate lateral tubercles of the prothorax, situated a little more markedly behind the middle, in the very narrow metasternal episterna, longer antennæ and in the very slender tarsi, the basal joint of the posterior being three or four times as long as wide. The type is *Leptostylus parvus* Lec., and in addition I have before me two other species, which may be described as follows:

Astylidius versutus n. sp.—Small, more slender than usual, convex, rufo-piceous, rufous beneath, not very densely clothed with minute luteo-cinereous hairs, which do not conceal the punctures, the elytra each with a short transverse discal line of white at three-fifths; head densely clothed with umber hairs, deeply indented between the strong antennal tubercles, the antennæ very slender and filiform, three-fourths longer than the body, pale, mottled with darker, the articular apices darker, the scape moderate, elongate-ovular; prothorax two-thirds wider than long, finely, loosely punctate, the surface even, excepting a short and very oblique ridge at each side of the middle anteriorly, the median line slightly prominent behind the middle for a short distance; lateral tubercles just behind the middle, small and obtusely angulate but prominent; elytra three-fourths longer than wide, parallel, rounding to the subacute apex in apical third, the apices obliquely and arcuately truncate, without distinct angles; elevated lines feeble, the inner with a small acute tubercle near the base, the punctures rather coarse, deep and well separated, close on the inflexed flanks; femora strongly clavate, tarsi slender, the first joint of the posterior slender, much longer than the next two combined. Length (♂) 5.0 mm.; width 1.7 mm. District of Columbia.

Allied to *parvus* Lec., but differs in its more elongate form, longer legs and antennæ and somewhat in the form of the lateral thoracic tubercles, which in *parvus* are a little smaller and more acute.

Astylidius leiopinus n. sp.—Somewhat similar to the preceding but much stouter, convex, piceous, clothed rather closely and uniformly with fine luteo-ochreous pubescence, the elytra with a narrow straight oblique line on each, from the suture slightly behind the middle, to the median line at three-fifths, also with a slight amount of white pubescence exterior to this; head narrower than the prothorax, the antennæ (♀) two-thirds longer than the body, pale, maculate with ochreous and brown pubescence; prothorax twice as wide as long, nearly even, the two anterior short oblique ridges obtuse, the lateral projection at basal two-fifths obtusely angulate and distinct; punctures fine, not close, with a line of slightly larger punctures near the base; scutellum dark; elytra one-half longer than wide, parallel, gradually rounding, than oblique in apical

two-fifths, the pointed apices narrowly, evenly and strongly rounded; surface with not wholly concealed and rather coarse, well separated punctures and three or four irregular though evident costules, bearing strongly marked clusters of erect hairs of darker tint; under surface dull rufous; femora clavate; first hind tarsal joint between three and four times as long as wide. Length (♀) 6.0 mm.; width 2.6 mm. Texas (Columbus).

Differs from *versutus* in its much stouter form, more transverse prothorax and in the oblique elytral fasciæ nearly as in *Leiopus alpha* and others.

Astylopsis n. gen.

Although the general facies of the body in *Lamia macula* Say, is nearly as in *Leptostylus*, the coxæ similarly very widely separated and the tarsi similarly thick, there are several structural differences of importance, among which may be mentioned the much less coarsely faceted eyes and the more evenly punctate sculpture of the pronotum, also the narrowed front, smaller organs of the mouth and shorter antennal scape, with the outer angle at apex more acute. For this species I would therefore propose the above generic name and the *Lamia guttata* of Say (*Amniscus commixtus* Hald.) is another member of the genus; the latter name is unaccountably misprinted *sexguttatus*, as a member of *Leptostylus*, by Hamilton (Tr. Am. Ent. Soc., 1896, p. 119).

It is highly probable that *Leptostylus albidus* Lec., from Arizona, will also prove to be generically distinct when more carefully examined, as the erect hairs of the upper surface are wholly foreign to the other species and usually constitute an important generic character in this difficult group. *Amniscus perplexus* Hald., is another apparently peculiar species, which seems to have been misinterpreted by Hamilton; the prothorax is said to have "small impressed punctures," but, more especially, the elytra are said to be "entire at tip," cinereous, "hairy" and mottled with dark brown. In *Amniscus collaris* Hald., the prothorax is said to be "thickly punctured," which, as well as the subentire elytral apices, would render it quite distinct from *Leptostylus lecontei* and *crescenticus* described above.

Nyssodrysina n. gen.

The genus *Nyssodrys* of Bates, as now organized, is very composite, containing many inharmonious elements. No type species

has been designated, but Mr. Bates has fortunately indicated those forms which he considers typical (Biol. Cent. Amer., Col., V, p. 179) and I would therefore formally select *Nyssodrys deleta* Bates, as the type of the genus. On this assumption it becomes possible to give the generic name to our *Leiopus haldemani* Lec., which has recently been placed in *Nyssodrys*, but which is not by any means congeneric with *deleta*. It differs in having a small acute oblique spine at each side of the prothorax very near the base, more convex upper surface of the body and clavate and not gradually thickened femora; the ovipositor is not long but very short, triangular, with rounded apical angle. The lower lobe of the eye is long and suboblong, being but slightly narrower below, the antennæ not quite twice as long as the body, the sterna moderately wide between the coxæ and the elytra are obliquely truncate at tip. The type is *Nyssodrysina haldemani* Lec., occurring in Georgia.

Leiopus Serv.

Omitting certain well characterized species of larger size, named *variegatus*, *wilti* and *setipes*, and some smaller and more obese species of the *crassulus* type, somewhat resembling *Leptostylus biustus* to external view, such as *crassulus*, *centralis* and *decorus*, which I do not have at hand, there are a considerable number of small and more obscure species clustering about *alpha*, *fascicularis*, *punctatus* and *crassulus*, which are invariably confused in cabinets but which, on closer study, seem to lend themselves very well to taxonomic treatment as follows:

Elytra more elongate, twice as long as wide or more, the fascia at or near three-fifths from the base; species eastern in distribution.....2
Elytra not so elongate, less than twice as long as wide, always with more compact and conspicuous cinereous vestiture of the general surface, the fascia more posterior, at about two-thirds from the base; species, excepting *mediator*, of the southwestern—or more essentially Sonoran —faunas.....12
2—Fascia—black bordered anteriorly with cinereous—transverse, with an obtuse and feeble anterior sutural prolongation.....3
Fascia oblique, the two forming a very obtuse angle on the suture, always well behind the middle.....5
Fascia much more oblique, the two uniting on the suture at the middle of the length.....11
3—Sides of the prothorax oblique anteriorly, from the apex of the large prominent triangular tooth at basal third. Body moderately stout,

unusually convex, testaceous, with a large blackish cloud on each elytron centring at basal third, and a small discal cloud near the apex behind the fascia; pubescence cinereous, uneven in distribution; antennæ dark, mottled and with dark articular apices; prothorax very short, finely, densely punctate, with a small indefinite elevation at each side of the middle anteriorly; elytra closely, rather coarsely and conspicuously punctate, twice as long as wide, parallel, the subacute apices narrowly and very obliquely sinuato-truncate, each with three fine feeble discal raised lines, bearing minute distant blackish clusters of erect hairs; upper marginal line of the flanks acute, obtuse basally; femora all distinctly though moderately clavate. Length (♀) 5.4 mm.; width 1.9 mm. Illinois. . **dentatus** n. sp.

Sides of the prothorax subparallel, broadly swollen behind the middle, with a small acute denticle projecting from the convexity. 4

4—Elytra rather convex, not more than twice as long as wide, rufo-piceous, the lateral cloud not defined and scarcely evident; cinereous vestiture sometimes mostly yellowish, not conspicuous near the humeri; antennæ as in the preceding; prothorax smaller and narrower, two-thirds wider than long, almost even on the surface and closely punctulate but with mottled vestiture; elytra coarsely, deeply, rather closely punctate, the punctures separated by scarcely more than their own diameters, the costuliform lines not elevated but with unusually large blackish penicillations; under surface obscure rufous, the metasternum medially, and abdominal segments apically, black; femora abruptly and moderately clavate. Length (♂ ♀) 4.3–6.3 mm.; width 1.4–2.2 mm. District of Columbia and Indiana. **punctatus** Hald.

Elytra more elongate, more than twice as long as wide, testaceous, with the lateral blackish cloud very large, extending fully to the median line, the cinereous or yellowish vestiture inconspicuous, except in a large area before the black fasciæ and toward the humeri; prothorax similar but with the two rounded anterior, and one posterior, black areas, better defined; elytra with the tips similar but not so oblique, the slightly raised lines conspicuously penicillate with black; punctures not so coarse and separated by twice their diameters or more; under surface nearly similar but with denser cinereous vestiture, the femora moderately clavate. Length (♂ ♀) 4.0–6.8 mm.; width 1.3–2.3 mm. A large series from Indiana. [*rusticus* Lec.; *xanthoxyli* Shimer] . . . . . **fascicularis** Harris

5—Femora more or less strongly and abuptly clavate as usual. 6

Femora less clavate, the posterior slender, only very feebly enlarged toward tip in either sex. 10

6—Elytra with the three discal lines rather sharply elevated and distinct, the penicillate points minute and inconspicuous. Body testaceous, the yellowish vestiture of the elytra very minute, not dense and not concealing the sculpture, conspicuously cinereous before the oblique black fasciæ, which are largely formed of three elongate spots on the raised lines; lateral black cloud confined to the flanks behind the humeri, not attaining the latter, the upper line of the flanks rather acute except basally, the punctures moderately coarse, well separated;

prothorax having the triangle of black spots as in the preceding but in shape more as in *dentatus*, the sides straight and oblique from the apex of the large triangular tooth to near the apex, more oblique but straight behind; femora strongly, abruptly clavate. Length (♀) 6.0 mm.; width 2.0 mm. District of Columbia. . **testaceus** n. sp.

Elytra with the three discal threads obsolescent, though generally traceable; sides of the prothorax with a more or less developed minute abrupt denticle as in *punctatus* 7

7—Antennal scape unusually thick, elongate-oval, scarcely four times as long as wide. Body moderately slender and convex, obscure testaceous, the cinereous vestiture longer and coarser than usual, almost concealing the sculpture though not dense; antennæ (♀) pale, mottled, three-fourths longer than the body; prothorax dull, nearly twice as wide as long, with the usual three dusky but not at all tuberculiform spots; elytra rather more than twice as long as wide, parallel, evenly arcuato-convergent at the sides posteriorly to the very narrow and oblique sinuate apical truncatures; surface deeply but not coarsely punctate, the punctures separated by fully their own widths, the lateral black cloud extending inwardly to outer fourth; oblique fascia composed of a few black spots; black clusters few in number but distinct; femora strongly and abruptly clavate. Length (♀) 6.2 mm.; width 2.2 mm. Indiana.

scapalis n. sp.

Antennal scape more slender, more than four times as long as wide . . . 8

8—Oblique elytral fasciæ composed each of three elongate black spots. Body dark brown in color, rather densely clothed with small dusky-cinereous hairs, with the small black points on the three feeble elytral threads very sparse but evident, the lateral black cloud confined to the flanks; prothorax less than twice as wide as long, densely dull, the three blackish spots somewhat convex; elytra formed as in the preceding but narrower, similarly punctured; abdomen fuscous, sometimes partially rufescent; hind femora (♀) unusually feebly clavate for this section though distinctly so. Length (♂♀) 5.0–5.5 mm.; width 1.8 mm. New Jersey and New York (Lake Champlain). A male from Indiana seems to be conspecific; it has all the femora strongly clavate. . . **vicinus** Hald.

Oblique elytral fasciæ continuous or partially so, not clearly composed of spots 9

9—Body unusually short and convex for this division of the genus, pale testaceous, the elytra barely twice as long as wide; pubescence minute, moderately dense, cinereous or yellowish; antennæ moderate; prothorax distinctly less than twice as wide as long, the three blackish spots very ill-defined; elytra more distinctly exceeding the prothorax in width than in any of the three preceding except *testaceus*, rounding behind to the oblique sinuous apices, the black lateral cloud extending inwardly some distance and distinct, the elevated lines obsolete, the fasciculi very few in number; femora strongly clavate in both sexes. Length (♂♀) 4.0–5.2 mm.; width 1.4–1.9 mm. District of Columbia and Delaware.

pleuralis n. sp.

Body normally elongate but of very small size, dark and obscure red-brown, the cinereous vestiture minute and not dense; antennæ dark testaceous, blackish at base; prothorax short, nearly twice as wide as long, not evidently maculate; elytra twice as long as wide, the apical truncatures only feebly oblique, not sinuate but nearly straight and with broadly obtuse external angles; punctures relatively coarse, deep and close-set, the elevated lines obsolete, the black lateral cloud nearly confined to the flanks; fasciculi diffuse, not black and scarcely visible; femora strongly, abruptly clavate. Length (♀) 4.0 mm.; width 1.4–1.5 mm. Indiana....**misellus** Lec.

10—Form slender, the size small, dark testaceous, the minute and dusky-cinereous hairs not very dense and not concealing the elytral punctures, which are relatively coarse though scarcely so large as in *punctatus* and smaller and feebler apically, separated by less than twice their diameters; antennæ (♀) very slender, dusky-testaceous, not maculate, the joints dark at their apices; prothorax short, nearly twice as wide as long, the sides oblique and straight from the spinose tubercle to the distinct apical angles; surface finely, closely punctulate, more strongly along the base, the two small anterior convexities feeble; elytra barely twice as long as wide, convex, the feebly elevated lines finely punctulate and more pubescent but inconspicuous, the penicillations and oblique fasciæ not very strongly defined; apices obliquely and very narrowly truncate, with only a trace of sinuation; two anterior femora short, distinctly though very moderately clavate, the posterior longer, thin, with only a feeble distal inflation, the legs nearly deep black throughout. Length (♀) 4.4 mm.; width 1.6 mm. Pennsylvania.....**timidus** n. sp.

Form more elongate and more depressed, piceous-black in color throughout, the legs black; head with an unusually deep interantennal indentation; antennæ blackish, extremely slender, three-fourths longer than the body; prothorax unusually short when compared with the elytra, twice as wide as long, the sides moderately oblique and straight from the acutely prominent denticle to the obtusely prominent apical angles, densely and finely sculptured, with very obscure maculation and dusky pubescence; elytra rather more than twice as long as wide, slightly wider at three-fifths than at base, rounding behind at the sides to the oblique apical truncatures, which are barely at all sinuate, the angles obtuse; surface with moderate and not very close punctures, partially concealed by the dark fuscous vestiture, which is flecked, especially toward apex, with small spots of cinereous, generally in linear arrangement, the lines and fasciculi indistinct, the oblique fasciæ feebly marked except by their cinereous anterior margin; under surface deep black, cinereo-pubescent, the legs shining, the two anterior femora feebly clavate, the posterior gradually very feebly enlarged distally, not distinctly clavate; fifth ventral not quite twice as long as the fourth, with a distinct, broadly angulate emargination. Length (♀) 4.7 mm.; width 1.65 mm. New York (Bluff Point, Lake Champlain).

obscurellus n. sp.

11—Body less elongate, more oblong, more depressed and with the

minute cinereous vestiture only moderately dense, not concealing the punctures, which, on the elytra, are notably strong, deep, not dense but very clearly defined, also with unusually pronounced sexual differences in form, the female being larger and relatively much broader than the male and with more transverse prothorax, testaceous in color, the two anterior pronotal dark spots conspicuous, the posterior faded and ill-defined; elytra with the feebly elevated lines more densely cinereo-pubescent and distantly penicillate, the lateral black area slightly invading the disk, the oblique fasciæ broken and serrulate, by reason of a rounded black spot at about the middle of each and on the first discal line. Length (♂♀) 5.6–7.8 mm.; width 1.9–3.0 mm. New Jersey and Massachusetts (Framingham),—Frost. Originally described from Georgia.

cinereus Lec.

Body narrower, more elongate and relatively more convex, piceous in color, the elytral pubescence longer, coarser and very dense, concealing the punctures, dusky-cinereous in color; prothorax two-thirds wider than long, the spots small and obsolescent, the sides feebly oblique before, very strongly oblique behind, the spiniform tooth near the base; elytra finely, rather sparsely punctate, the scutellum and elytral bead, thence posteriorly to the middle, infuscate, the lateral cloud not invading the disk, the very oblique fasciæ narrow and more even, though largely composed of the three elongate black spots, one on each of the three raised lines or threads, the latter here very feeble though slightly marked by denser vestiture, the black penicillations very small and sparse. Length (♀) 6.2 mm.; width 2.2 mm. Indiana. [*lateralis* Hald.].....**alpha** Say

12—Prothorax more or less nearly as in the *alpha* group preceding, strongly transverse, generally not much less than twice as wide as long.....13

Prothorax much more elongate and relatively narrower, not much more than one-half wider than long; body larger and more convex....14

13—Oblique fasciæ of the elytra rectilinear, not broken submedially but as usual not attaining the flanks; body stout, densely clothed with short pale uniform ashy vestiture; color fusco-testaceous; prothorax nearly twice as wide as long, swollen at the sides, the swelling with an acute denticle at basal third, the three dark spots small, feebly convex; elytra parallel, obliquely and feebly arcuate at the sides in apical third, the narrow apices very obliquely and rectilinearly truncate, the elevated lines feeble, remotely penicillate; lateral dark cloud slightly invading the disk, the latter with a very feeble clouded fascia behind and parallel to the narrow black fascia, which is at apical third; femora moderately clavate, the posterior scarcely at all less so. Length (♀) 5.8 mm.; width 2.4 mm. District of Columbia.....**moderator** n. sp.

Oblique fasciæ very indistinctly marked, broad but suffused, interrupted and sometimes obsolete; body narrower and more depressed than in the preceding, the vestiture yellowish-cinereous and not so conspicuous as usual in this group, the raised elytral lines obsolete except

near the base and on the declivity, where they are sinuously cinereous, the black fasciculi feeble and sparse, stronger at base, especially on the first line; color obscure testaceous; antennæ rufous, mottled, the articular apices dark; prothorax twice as wide as long or very nearly, the three dark spots feeble, the two anterior slightly swollen, the sides subarcuately oblique before the minute and very acute spine at basal third, the apical angles rounded; elytra strongly and closely punctate, the sculpture partially concealed, the lateral dark cloud invading the disk to outer third; apices feebly oblique, straight, with broadly rounded external angles; femora strongly clavate, the posterior less so in the female. Length (♂♀) 4.8–5.4 mm.; width 1.7–2.0 mm. Texas (Brownsville).....**texanus** n. sp.

Oblique fasciæ strongly marked in the generally paler and denser cinereous field, but always widely broken submedially, the outer disconnected spot more advanced; body stouter, still more convex; integuments dusky rufous, black in the large lateral elytral spot, which invades the disk to outer third and on which the cinereous hairs are sparser, thus greatly accentuating the blackness of the spot; head feebly indented; antennæ rufous, mottled, the articular apices black, two-thirds longer than the body (♂) or one-half (♀); prothorax slightly less than twice as wide as long, the lateral projection at basal third large, dentiform, with a minutely acicular apex, the surface dull, the dark spots feebly defined, brown; elytra three-fourths longer than wide, the pubescence somewhat variegated, broadly and indefinitely whitish and more tawny, the elevated lines feeble, the fasciculate tufts small, black and rather numerous; punctures coarse but not dense; femora all rather strongly and subequally clavate in both sexes. Length (♂♀) 4.8–5.8 mm.; width 1.8–2.25 mm. Texas (Brownsville and Austin). The Austin examples are scarcely so stout and with relatively slightly smaller head and prothorax, differing subspecifically.....**houstoni** n. sp.

14—Body larger, stout, convex, densely clothed with cinereous hairs, shaded in certain areas with yellowish tint; integuments tawny-rufous, darker in the lateral elytral spot, where the hairs are only a little shorter and but slightly less dense than elsewhere; head feebly indented; antennæ nearly as in the preceding but longer, three-fourths longer than the body (♀); prothorax but little more than one-half wider than long, otherwise nearly as in the preceding, the three blackish spots not visible in the broad general mottling; elytra three-fourths longer than wide, the oblique fasciæ broken exactly as in *houstoni*, the lateral spot paler brown and invading the disk fully to outer third, the elevated lines distinct, with the fasciculi very minute, brownish-black and sparse; apical truncatures only feebly oblique, broadly and feebly sinuate, with sharply marked angles; punctures coarse, not close-set; under surface with dense and rather coarse cinereous and feebly, finely dappled vestiture, longer and coarser than in *houstoni;* two anterior femora more strongly clavate than in the female of *houstoni* but with the posterior relatively less clavate. Length (♀) 6.7 mm.; width 2.6 mm. Texas (Columbus).....**mimeticus** Csy.

In this genus the size of the body varies between wide limits in nearly all the eastern species, but seems to be more constant in the stout species, which have more nearly the general habitus of *Leptostylus biustus*. The three groups of eastern species allied to *punctatus*, *vicinus* and *alpha* are clearly delimited and appear to be well defined natural divisions. *Cinereus* is amply distinct from *alpha*, and in fact could not be termed closely allied to Say's species, either in habitus, sculpture or sexual divergencies of size and outline; the very oblique and strongly zigzag fasciæ and coarse, very conspicuous punctures of *cinereus*, will at once distinguish it; I received a good series from Mr. Frost. *Mimeticus* is by no means closely related to *crassulus;* a note which I made on inspecting the type of the latter species, reads that the tips of the elytra are rounded, which however possibly means that the narrow truncature is limited by rounded angles, and that the vestiture is very short, not as long as in *houstoni* or *mimeticus*. *Crassulus* has its type locality, in Lower California, very remote from that of the latter two species, the climatic conditions being wholly dissimilar. I cannot identify *divergens* Hald., who states that the prothorax has two diverging velvety lines, the oblique elytral fasciæ somewhat as in *alpha*, but with an abdomen darker than the sterna and "polished"; it is 4 mm. in length.

Leiopus minuens Ham. (Tr. Am. Ent. Soc., 1896, p. 123), of which I have four examples from the type locality, Lake Worth, Florida, is not by any means a *Leiopus* but a *Leptostylus*, though the smallest of the typical members of that genus, *parvus* being placed here above in another genus; the basal joint of the hind tarsi is short and of the *Leptostylus* type. Dr. Hamilton evidently mixed his material, for he states that the thoracic tubercles are "sometimes spinose, sometimes not." I have assumed that in the typical *minuens* the tubercles are very obtusely rounded, as they are in my four specimens, as well as in *Leptostylus biustus* and other similar forms. *Leiopus schwarzi* Ham. (l. c., p, 124), is possibly also a *Leptostylus*, or more properly, perhaps, because of the more pointed thoracic tubercles, allied to *Astylidius parvus* Lec. I can form no idea of *Leiopus floridanus* Ham., published (l. c.) as a variety of *alpha*, but in all probability incorrectly.

Lepturges Bates.

In North America and the neotropics, to which regions it is confined, this genus is a very large one and naturally includes at present some discordant elements, as shown principally by the form of the body, nature of the thoracic spines, which however are always small acute and more or less near the base, and the form of the femora. In the more typical species of the genus, the hind femora, at least, are never abruptly or strongly clavate in either sex. Our species, as in the case of *Leiopus* and *Hyperplatys*, are somewhat more numerous and structurally diversified than hitherto supposed; those represented in my cabinet may be known as follows:

Body more elongate and of larger size, the hind femora lineiform in both sexes 2

Body shorter, small in size, the hind femora clavate as a rule, feebly in the female; antennæ hair-like in tenuity 5

2—Lateral thoracic spine basal, the hind margin subtransversely, broadly and feebly sinuate from the tips of the spine to the transverse median parts of the base 3

Lateral spine more abruptly formed, less basal, defined posteriorly by a less transverse and deeper sinus 4

3—Form stout, larger than usual, obscure testaceous, very densely and conspicuously clothed with fine even and pale cinereous pubescence, variegated with blackish-brown spots; head feebly indented, the eyes more deeply emarginate than in *confluens;* antennæ subsimilar, very pale and uniform, three-fourths longer than the body (♀); prothorax more trapezoidal, rather more than one-half wider than long, the converging sides nearly straight, feebly undulate medially, rounded at apex, which is much narrower than the base; surface even, except a feeble transverse subbasal impressed line, ornamented with four small elongate spots medially, two near the apex and two subbasal, forming a parallelogram, also with a small brown point near the basal angles; punctures fine and sparse; elytra slightly more than twice as long as wide, more parallel, the sides rounding more abruptly, though broadly, posteriorly to the apices, which are strongly and evenly rounded; punctures fine and sparse, the dark maculation nearly as in the following but wanting near the scutellum, the two elongate coalescent spots behind the middle ashy, except about their peripheries; last dorsal segment flat, tapering, with straight sides and arcuato-truncate apex, projecting distinctly behind the elytra, and not even with the elytral tips and narrowly rounded at apex as it is in *confluens.* Length (♀) 7.7 mm.; width 2.4 mm. Texas (Austin). A single female taken by the writer many years ago ..... **canus** n. sp.

Form nearly as in the preceding, but not so stout and with the minute cinereous vestiture much more completely replaced by more comminuted spots of brown; head indented; antennæ much less pallid

than in the preceding, very slender; prothorax barely one-half wider than long, feebly trapezoidal, the apex but little narrowed, the dark maculation normally forming four very large, more or less confluent spots, the depression near the basal angles also dark; elytra more elongate, much more than twice as long as wide, subparallel, very gradually and arcuately narrowing behind the middle to the broadly obtuse and rounded apices, which are relatively very much broader than in *canus*, the punctures fine, sparse; dark maculation having nearly the same form and extent as in the following species, but variegated and more comminuted with ashy hairs; last dorsal segment (♀) projecting distinctly behind the elytra, flat, with its apex rounded, but less rapidly cuneate than in *canus*. Length (♂♀) 5.7–7.2 mm.; width 1.7–2.2 mm. Atlantic regions. [*angulatus* Lec.].

confluens Hald.

4—Form elongate, rather depressed; color dark umber, clothed rather densely with extremely short fusco-cinereous pubescence, variegated with darker linear spots, the dark areas of the elytra solid and not partially ashy as they are in the preceding; antennæ dark luteo-testaceous; prothorax shorter, more or less trapezoidal, with feebly undulating sides, rounding apically, two-thirds to three-fourths wider than long, very indefinitely variegated; elytra subparallel, the sides gradually rounding and converging posteriorly to the strongly rounded apices, much more than twice as long as wide, the spots large, one oblique from the middle of the base toward the suture behind the scutellum, one lateral and irregular from the humerus, expanding posteriorly irregularly, this area sometimes attaining the suture behind the middle, thence narrowing to the external margin near the apex; last dorsal (♀) narrowly parabolic, not extending behind the elytra. Length (♂♀) 6.2–7.2 mm.; width 1.8–2.2 mm. New York, Indiana and Ontario. [*pictus* Lec.].

symmetricus Hald.

Form elongate, feebly flattened above, pale rufo-testaceous in color throughout and with the vestiture so minute and fusco-cinereous as to be scarcely visible; head deeply indented; antennæ slender, concolorous, three-fourths longer than the body (♂), nearly similar (♀); prothorax trapezoidal, three-fifths wider than long, the spine much before the base, barely behind basal third, strong and sharply pointed; surface feebly impressed along the base laterally, finely, sparsely punctate, almost impunctate anteriorly, the vestiture not at all concealing the surface, not variegated; elytra distinctly cuneiform (♂), broader and nearly parallel (♀), the sides broadly arcuate, slightly more converging posteriorly to the narrowly and transversely subtruncate apices, the angles rounded; surface convex along the sides above the flanks, flat discally, with a large broad and feeble convexity near the base of each and nearly obsolete in the female, the punctures strong, moderately close, becoming wholly obsolete at apex; vestiture not at all concealing the surface, uniform, there being only an easily denuded minute discal spot of ashy hairs at basal fifth and a feeble oblique ashy discal streak near apical fourth; color nearly uniform but becoming gradually infuscate posteriorly;

sutural beading strong, obsolete basally; last dorsal (♀) projecting very slightly behind the elytra, broad, feebly cuneate, the apex broadly and feebly bilobed. Length (♂♀) 6.2–8.0 mm.; width 1.8–2.7 mm. Mexico (Durango City),—Wickham. *__subglaber__ n. sp.

Form moderately elongate, feebly, subevenly convex, fuscous, densely clothed with uniform ashy pubescence, spotted with black; head deeply indented; antennæ very pale and uniform luteo-flavate, slightly more than twice as long as the body; prothorax feebly trapezoidal, two-thirds wider than long, the spine well in front of the base, strong and very aciculate at tip; surface with four large circular spots, forming almost a square, the sides black at the middle; elytra parallel, rounding more rapidly at the sides posteriorly, the apices narrowly subtruncate, not at all prolonged; surface with the fine sparse punctures virtually concealed by the dense cinereous hairs, each with a large subcircular and clearly defined spot of black medially near the base, two in oblique line near basal fourth, one just outside the median line a little behind the middle and another nearer the median line at apical fifth; femora testaceous, black in about apical half, the tibiæ and tarsi nearly black; under surface blackish, broadly pale along the median line throughout; basal joint of the hind tarsi nearly one-half longer than the entire remainder. Length 6.5–6.8 mm.; width 2.0–2.2 mm. Indiana and Ohio. __regularis__ Lec.

5—Elytral apex not black.....6

Elytral apices black, the tips not prolonged; post-median fascia broad and transverse.....11

6—Post-median fascia of the elytra narrower and more oblique, its inner limit distant from the suture and strongly oblique.....7

Post-median fascia much broader, transverse, either crossing the suture or with its inner edge parallel and very close thereto; tips not prolonged.....10

7—Elytral tips prolonged posteriorly to a slight degree, rounded or subtruncate with rounded angles, antennæ two and a half to three-fourths times as long as the body.....8

Elytral tips not prolonged, obliquely recti-truncate, with distinct but not prominent angle; antennæ fully three times as long as the body or more.....9

8—Outline narrow and elongate, pale luteo-flavate in color, the dark maculation rather pale brown; cinereous vestiture fine, moderately dense, becoming brown and very inconspicuous on the apparently denuded darker areas; head feebly indented, the antennæ pale luteous; prothorax one-half (♂) to three-fourths (♀) wider than long, very feebly trapezoidal, the spine strong, posteriorly oblique as usual, far from the base and between basal third and fourth, infumate, not maculate, minutely, densely punctulate, with stronger punctures along the base; scutellum pale; elytra fully twice as long as wide, slightly shorter in the female, somewhat strongly but not densely punctate, closely and deeply at the sides, the line of flexure not cariniform though distinct; maculation consisting of a subbasal discal spot, a larger post-humeral marginal one, with a feebler discal

parallel line and a smaller one near the suture, a sharply arcuate transverse post-medial fascia, more or less expanding at the margin, extending nubilously to the tip and a small discal spot near the apex, the apices separately strongly and evenly rounded; femora strongly clavate, the posterior less so, especially in the female, though very evidently also in the latter; under surface pale, infumate narrowly along the sides. Length (♂♀) 4.6–6.2 mm.; width 1.4–2.0 mm. New York, Ohio, Ontario and District of Columbia. . . **signatus** Lec.

Outline much narrower, smaller and even narrower than *signatus*, much darker, black or nearly so, the under surface broadly pallescent along the middle, the femora at base and the tibiæ, except distally, feebly picescent, the tarsi black, the first joint of the posterior (♂) scarcely so long as the remainder, shorter than in the preceding, where it is paler and equal to the remainder, the prothorax (♂) feebly trapezoidal, much shorter than in the same sex of *signatus*, very transverse, fully three-fourths wider than long, the strong oblique spines at basal third; disk densely punctulate, not maculate; elytra fully twice as long as wide, gradually feebly and arcuately tapering behind to the apices, which are barely at all prolonged and broader and more obtuse than in the preceding species and evenly rounded; maculation very indistinct on the blackish ground, which is loosely clothed with short fine dusky-cinereous hairs, of the same style as in *signatus* but more developed; punctures similarly strong but more evident; femora all clavate. Length (♂) 5.0 mm.; width 1.5 mm. New York (Bluff Point, Lake Champlain).

tenebrosus n. sp.

9—Body very much shorter, relatively stouter and more convex than in the preceding section, rufo-piceous, the ground of the elytra densely covered with short cinereous vestiture, the maculation pale brown, with certain points more blackish; antennæ very long, extremely tenuous; prothorax transverse, feebly trapezoidal, the sides more rounding at apex than usual, the spine at basal fourth; surface with two nubilous vittæ expanding anteriorly; elytra only three-fourths longer than wide, parallel, rounding rapidly behind, finely, rather sparsely punctate, not densely on the flanks, which are rather shallow and with very broadly obtuse line of flexure, the basal spot large, quadrate, inclosing a small cinereous point and joining the black humeri, the latter spot gradually evanescent along the margin but adjoining an oblique discal series of three nubilous spots at and near basal third, the inner near the suture; a sharply arcuate more blackish fascia behind the middle expands externally but comes far from reaching the margin and the oblique inner ramus is faint and near the suture; behind this there are three oval faint spots forming a subapical triangle; legs shorter than usual, the two anterior femora strongly clavate, the posterior slender, not clavate; tibiæ and tarsi much shorter, the basal joint of the posterior much shorter than the remainder. Length (♀) 4.2 mm.; width 1.5 mm. Texas (Brownsville),—Wickham. . . . . **celtis** Schf.

10—Form (♀) notably short as in the preceding, blackish, the elytra a

little paler, the maculation umber brown; cinereous pubescence of the elytral ground only moderately dense, of the pronotum finer and less obvious as usual; antennæ (♀) about two and three-fourths times as long as the body, very tenuous; prothorax (♀) two-thirds wider than long, with two broad nubilous vittæ enlarged anteriorly and sometimes almost resolved into four large spots, the spine just behind basal third; elytra (♀) not more than two-thirds longer than wide, rather finely, sparsely punctate, strongly and closely externally, with a common transverse dark spot just behind the humeri, narrowly prolonged posteriorly along the suture, a large post-humeral area on the flanks, extending onto the disk, where it is truncated and paralleled by two elongate spots in oblique line, the post-medial dark spot very large, irregularly subquadrate, attaining but not crossing the paler brown sutural beading, divided near the external margin; between this and the apex there is a single rather large discal spot; femora (♀) moderately clavate, the posterior slender, not clavate; pale hind tarsi with the basal joint rather longer than the entire remainder, the legs normally slender and longer than in *celtis*. Length (♂♀) 3.6–4.6 mm.; width 1.0–1.5 mm. New York to Wisconsin..... **querci** Fitch

Form narrow and elongate, feebly convex, deep black throughout, the coxæ and femoral bases rufo-piceous; cinereous vestiture whitish, dense as usual, much finer and less distinct on the prothorax; head small, indented; antennæ (♀) two and one-half times as long as the body, very tenuous, obscure testaceous; prothorax as in the female of *querci;* elytra narrower and much more elongate, twice as long as wide, narrowing rather rapidly behind to the narrowly subtruncate apices, the punctures small and sparse, coarser and dense on the flanks, the maculation deep black as in *querci*, except that the post-median fascia is very broad and more even from the suture to the margin and two-fifths as wide as the entire length of the elytra, along the margin prolonged nubilously to the apex, where it adjoins a very small feeble discal spot; last dorsal not appearing behind the elytra; legs normally long, the two anterior femora feebly clavate, the posterior linear, not clavate; tarsi shorter but very slender, the basal joint of the posterior barely longer than the remainder. Length (♀) 4.0 mm.; width 1.35 mm. Pennsylvania (Buena Vista Spring, Franklin Co.)..... **tristis** n. sp.

11—Body smaller than in any of the preceding species, not very slender, black or piceous, the pubescence as usual whitish; prothorax shorter, twice as wide as long, the spine strong, before basal fourth, the disk not clearly maculate; elytra less than twice as long as wide in both sexes, with a transverse common post-scutellar and humeral spot, sometimes united, a small marginal spot behind the humeri and obliquely prolonged discally for a short distance and a very broad entire transverse fascia just behind the middle, separated from the broadly and solidly black apex by a narrower transverse pale fascia; there is also a small sutural macula before the middle, representing the two small inner spots of the oblique series in the *querci* group;

femora (♂) all strongly clavate, or (♀) the anterior two moderately, the posterior not, clavate; legs rather short. Length (♂ ♀) 2.7–3.5 mm.; width 0.8–1.2 mm. District of Columbia, Illinois and Wisconsin.....**facetus** Say

Tenebrosus differs from *signatus* in its more slender form, blackish coloration, more narrowly attenuate elytral apices and in other features. Of the *querci* group, *celtis* is very distinct in its obliquely truncate elytral apices and much shorter legs, among other characters; *tristis* is distinct in its much more elongate form, being even more slender in the female than the male of *querci*, also in its intense black color and the very broad post-median elytral fascia, which is even relatively broader than in *facetus*. Some errors relating to the identity of *angulatus* and *pictus* Lec., and *symmetricus* and *confluens* Hald., are rectified in the table; *pictus* was separated from *angulatus* because of the distinctly less basal thoracic spine and is plainly the species described by Haldeman, under the name *symmetricus*, while the *angulatus* of LeConte is evidently the same as *confluens* Hald., which was placed as a variety of *symmetricus* by Haldeman and apparently overlooked by LeConte.

Valenus Csy.

This genus is somewhat allied to *Lepturges* but is of very much broader form of body and with less narrowly separated coxæ, the intermediate being separated by a third of their own diameter; it is also widely separated by the form of the tarsi, which are broad and subinflated, the first joint of the posterior being not quite three times as long as wide, expanded at apex and narrowed toward base, barely longer than the next two joints combined, the second quadrate, not quite as long as wide. The claws are very small, divaricate, the femora all strongly clavate in the type, and the flanks of the elytra are separated from the feebly convex upper surface by an obtusely angulate line of flexure, obsolete basally; the elytra throughout have long sparse erect bristle-like hairs; the thoracic spines are very small and less basal then in *Lepturges*, being exactly at basal third. The antennæ are shorter and less tenuous than in that genus and the outer joints gradually diminish in length; they are, in the assumably male type, but little more than one-half longer than the body. *Valenus* is also allied to the neotropical *Chætanes* Bates, but is not identical with that genus.

Hyperplatys Hald.

In the globular, prominent and more or less narrowly separated coxæ, this genus conforms well with the other genera of the *Leiopus* group, but the upper surface is here flatter than in any of the others and is separated from the flat and feebly inflexed flanks* by a sharply marked and often prominently cariniform line of flexure. The style or type of ornamentation is also wholly different from either *Leiopus* or *Lepturges;* so there can be no doubt that the genus is valid, and not a synonym of *Leiopus* as stated in the Munich catalogue. The neotropical genus *Anisopodus* is also allied rather closely to *Hyperplatys*, and the species described by Bates under the names *Anisopodus argus*, *pardalis* and *pusillus* are evidently *Hyperplatys* rather than *Anisopodus*, the last two without the least doubt; *argus*, however, would be by far the largest known species, and, in view of its extreme southern habitat, may prove to be different, although it seems to have very nearly the same type of ornamentation. In fact Bates himself, who had previously overlooked *Hyperplatys*, presumably because of the Munich catalogue synonymy, states later on, under *pardalis* that that species at least might with equal propriety be placed in *Hyperplatys*.

The femora are always strongly clavate in the male and sometimes very strongly so in that sex and less clavate, though mutually subequally so in the female, but in one species, of isolated habitat and distinct appearance—*californica* Csy.,—the hind femora of the female become linear, or at least non-clavate, as in most forms of *Lepturges*. The elytral apices are always narrowly, very obliquely and deeply sinuato-truncate, with the outer angles prolonged posteriorly, sometimes, as in the notably aberrant *femoralis* of Haldeman, becoming finely aciculate and very prominent. The thoracic spines are as in *Lepturges*, though smaller, more abrupt and more aciculate. The basal joint of the slender hind tarsi is always very elongate, generally longer—especially in the male,—though sometimes a little shorter in both sexes, than the remainder. The antennæ are twice as long as the body or more and finely capillary.

*Not "epipleura," as written by Bates; the true epipleura, as so well developed for instance in Coccinellidæ, being a very different structure from the deflexed to feebly inflexed flanks, even when divided from the upper surface by a prominent line as here and also in many Tenebrionid genera.

The species of *Hyperplatys* are really very numerous, though at present almost wholly undifferentiated in collections, because of the comparative uniformity of maculation; those which are definable in my own collection may perhaps be recognized by the following statement:

Species of the Atlantic regions and westward to the Rocky Mountains; femora all clavate, rather more strongly in the male, the posterior relatively more or less visibly less so in the female.....2

Species of the true Pacific coast fauna; femora all clavate, except the posterior of the female, which are slender and not clavate.....15

2—Elytra sparsely speckled with spots, generally black but brown in *maculata*, and having on each a larger discal spot between posterior third and fourth.....3

Elytra with spots of black, rather uniformly distributed throughout and without trace of a larger discal posterior spot; middle coxæ separated by a third of their width to rather less than a fourth; basal joint of the hind tarsi longer than the remainder.....13

Elytra uniformly dull smoky-black; middle coxæ separated by about a third of their width; basal joint of the hind tarsi shorter than the remainder.....14

3—Middle coxæ very approximate, separated by barely a fifth of their own width.....4

Middle coxæ less close, separated by a third of their width more or less.5

Middle coxæ unusually distant, separated by rather more than one-half of their width.....12

4—Body of exceptional form, stout but with relatively much narrower head and prothorax, in this respect somewhat as in *femoralis*, pale testaceous; legs dull black, the femora bright rufous to beyond the middle; ground vestiture consisting of small stout and closely decumbent ashy hairs, not very densely placed; head dull, with a fine entire medial stria, much narrower than the prothorax, the antennæ long, slender, pale; prothorax four-fifths wider than long, subparallel, the spine aciculate and before basal fourth; punctures strong and unusually close-set, the middle two of the four brown circular spots large; elytra short, three-fourths longer than wide, parallel, rounding and narrowing obliquely in apical third, the outer angle of the apex dentiform, acute; humeri unusually angulate and widely exposed at base; surface unusually coarsely, deeply but not densely punctate, a little more closely on the more shining flanks, which are uniformly rufous; spots large, circular, brown, the posterior discal relatively small, obliquely linear; legs well developed, the femora (♂) very strongly clavate, the posterior notably longer than the others, approaching *Anisopodus;* fifth ventral scarcely as long as the fourth, broadly rounded. Length (♂) 4.8 mm.; width 1.8 mm. Pennsylvania.....**maculata** Hald.

5—Basal joint of the hind tarsi distinctly shorter than the remainder. Body moderately stout, subparallel, feebly convex, the carina at the line of flexure of the elytra strong; color pale brown, closely covered

with small decumbent ochreous hairs; front short, densely, evenly punctate and dull, the median line very obsoletely impressed; antennæ (♀) testaceous, the scape black, the joints black toward apex, two and a third times as long as the body; prothorax very transverse, more than twice as wide as long, much wider than the head, distinctly narrower than the elytra, the sides feebly subangulate at the middle, thence straight and oblique to the apex, the spine narrow, acute, abruptly spiculiform, at basal fourth; surface strongly, moderately closely punctate, the four black spots as usual; elytra not quite twice as long as wide, parallel, rounding obliquely behind, the apical angle acutely dentiform, the humeri rounded; surface with well separated moderate punctures, coarser and close on the clouded flanks; spots deep black, sparse and moderate in size, becoming much larger and subconfluent behind the larger discal spot, each elytron with the two slightly elevated discal lines of denser and paler hairs very distinct; legs moderate. Length (♀) 4.7 mm.; width 1.65 mm. Rhode Island (Watch Hill),—Wirt Robinson.
lentiginosa n. sp.

Basal joint as long as the remainder or longer, especially in the male. . 6

6—Interspaces between the pronotal punctures smooth and highly polished and also with a regular system of minute clear-cut punctulation; elytra uneven. Outline moderately stout and subparallel, feebly convex, black or feebly picescent, the flanks rufescent; legs black, the femora pale rufous except apically; pubescence close, minute as usual and cinereous; front slightly shining, broad, the fine stria obsolete anteriorly, the punctulation fine and dense; antennæ (♂) black throughout, two and three-fourths times as long as the body; prothorax broad, fully twice as wide as long, the spicule rather long and slender, at basal fifth or sixth; sides arcuate, oblique anteriorly; surface mostly denuded in the type but finely, sparsely punctate, with a small feeble convexity at each side of the middle anteriorly, on which the punctures are wanting; elytra slightly though evidently wider than the prothorax, short, three-fifths longer than wide, parallel, obliquely rounding at the sides posteriorly, the angle dentiform but with its apex rather blunt; surface broadly, transversely depressed near basal third and each with traces of two fine and feebly elevated lines medially, moderately but unusually closely punctate, very closely so toward base, the spots moderate, unevenly distributed, the posterior spot transverse, attaining the acute but scarcely cariniform line of flexure, the flanks uniformly dull rufous, strongly and closely punctate; femora strongly clavate. Length (♂) 5.0 mm.; width 1.9 mm. Colorado (Boulder Co.). . . . . **montana** n. sp.

Interspaces finely and feebly, confusedly rugulose and less shining; elytral surface even. 7

7—Front not evenly, very densely punctate and dull as in *lentiginosa* but shining, with the punctures simple, not dense and at most feebly asperate, the interspaces smooth. Body unusually stout, fuscous, paler and rufescent on the flanks, black beneath, the vestiture fine, close, dusky-cinereous; legs blackish-piceous, the

extremely clavate femora red in basal half or less; head rather large, though narrower than the prothorax, strongly, transversely grooved behind the antennal prominences, the antennæ (♂) dusky-testaceous, black at base, the outer joints black distally, barely twice as long as the body; prothorax not quite twice as wide as long, much narrower than the elytra, the very oblique spicules near basal fourth; punctures not coarse but very deep, rather close, the rounded black spots moderate; surface even and with an impunctate flat line basally; elytra three-fifths longer than wide, the sides very feebly converging from the rounded and broadly exposed humeri, rounding and converging in apical third, the angle dentiform, moderately acute; line of flexure acutely defined but not cariniform; punctures moderate, somewhat close-set, very close and deep on the flanks, the outer of the elevated lines alone visible and only medially, spots rather large, sparse, the posterior spot discal, transversely oval; fifth ventral (♂) not distinctly longer than the fourth, broadly truncate, the truncature distinctly sinuate medially. Length (♂) 5.8 mm.; width 2.2 mm. Indiana.....**robustula** n. sp.

Front more or less densely granulose and rugosely punctate, in a manner very different from the preceding or in *lentiginosa*.....8

8—Form narrower and more parallel, the prothorax but very little narrower than the elytra. Blackish, the flanks barely at all less so, the legs dull black, the femora pale basally; vestiture close, whitish-cinereous, the denser lines of the elytra distinct except basally but not elevated; head well developed, feebly transversely indented; antennæ (♂) twice as long as the body, rufous, black at the articular apices, the scape black; prothorax not quite twice as wide as long, the spicules short, at basal fifth; sides broadly angulate at the middle, thence rather strongly oblique to the apex; surface finely, rather sparsely punctate, with a large feeble rounded tumor at each side of the median line before the middle, the interspaces finely, transversely strigilate, the spots rather small; elytra not quite twice as long as wide, of the usual outline, the apical angle dentiform, moderately acute, the line of flexure strongly cariniform; punctures small, rather sparse, well separated even on the flanks, the spots moderate, sparse, posterior attaining the carina in the type; femora moderately clavate. Length (♂) 4.8 mm.; width 1.65 mm. Iowa (Keokuk).....**amnicola** n. sp.

Form moderately stout, less parallel, the prothorax always notably narrower than the elytra.....9

9—Median line of the pronotum carinate from before the middle to basal fourth. Body smaller than in any other species and less stout, with smaller head, the front very densely, granularly rugose throughout and dull; color piceo-rufous, the vestiture cinereous, minute, not dense; antennæ pale rufous, the articular apices black, the scape piceous; prothorax short, very nearly twice as wide as long, the spicule near basal fourth; surface bitumorose somewhat as in the preceding, finely but strongly, not densely punctate, broadly concave basally throughout the width; elytra three-fourths longer than wide, of the usual form, the punctures fine, rather sparse, coarse and close

on the flanks, which are blackish though paler posteriorly, the line of flexure finely cariniform; two discal lines not visible, the black dots sparse and small, the posterior spot transverse, attaining the carina in the type; legs rather short, the femora moderately clavate. Length (♂) 3.7 mm.; width 1.35 mm. Rhode Island (Boston Neck).
delicata n. sp.

Median line of the pronotum not definitely carinate 10

10—Prothorax with pronounced and rather prominent though obtuse apical angles, standing far our laterally from the fine apical beading. Body small in size, rather stout, blackish, with the vestiture dark and not dense, ochreo-cinereous in color; head very strongly and densely micro-granulose and dull, strongly indented, the antennæ (♀) not very pale, unusually short, three-fourths longer than the body; prothorax unusually short, twice as wide as long, the spicules standing out almost perpendicularly near basal fifth, the sides subangularly prominent at the middle; surface evenly convex, the black spots not tumid, the punctures fine, rather sparse; elytra short, three-fifths longer than wide, rather strongly and closely punctate, the line of flexure carinate, the flanks black or nearly so, rufescent at the lower margin, strongly, densely punctate; discal lines feebly evident, not elevated, the black spots small, scattered, the posterior spot transverse, usually attaining the carina; hind femur (♀) slender, only feebly but rather abruptly clavate at the distal extremity. Length (♀) 4.2 mm.; width 1.5 mm. Pennsylvania ..... **nigrella** Hald.

Prothorax with the apical angle still more obtuse and notably less prominent; body larger 11

11—Form moderately stout, blackish-piceous, the elytral flanks rufescent; head rather small, much narrower than the prothorax in both sexes, indented, feebly grooved between the antennæ, the latter distinctly more than twice as long as the body in both sexes, differing but slightly sexually, pale except the articular apices, the scape blackish; prothorax twice as wide as long, nearly similar sexually though broader in the male, the sides unusually prominent medially, thence strongly oblique to the apex, the spicules small, at basal fifth; surface broadly concave along the base, moderately punctate, the medial black spots distinct and slightly tumid, the lateral often wanting; elytra nearly four-fifths longer than wide, of the usual outline, the carina sharply marked, the discal lines unusually distinct but not elevated; punctures moderate, widely separated, the black spots rather large, especially in the female, somewhat numerous, the posterior spot isolated, rounded; femora clavate, nubilously rufous basally, the fine pubescence dense, the posterior (♀) distinctly clavate distally; fifth ventral (♂) subtriangular, longer than the fourth, narrowly truncate at tip. Length (♂♀) 4.7–5.0 mm.; width 1.7–1.83 mm. Indiana and New York (Catskill Mts.).
cryptica n. sp.

Form broader, the color paler, testaceous, clothed with cinereous pubescence; head distinctly larger, rather strongly canaliculate along the median line; antennæ long as in the preceding but with the basal

joint not black but only slightly browner, two and one-half times as long as the body (♂), or but little more than twice as long (♀); prothorax less transverse, otherwise nearly similar, except that the spicules are much less minute and the sides before them less oblique, the spots small, feebler and brownish; elytra broader, two-thirds to three-fourths longer than wide, otherwise similar, except that the punctures are rather closer, the pale lines less distinct and the spots smaller, the posterior larger, broadly truncated at the carina, the apical angles dentiform, not very acute; flanks in great part blackish, coarsely, very deeply and densely punctate; under surface rufous, the femora rather strongly clavate, only a little less so in the female, the posterior (♀) distinctly clavate though rather gradually so and much less abruptly than in *cryptica;* fifth ventral (♂) longer than the fourth, the apical truncature much broader than in the preceding. Length (♂ ♀) 4.5–5.6 mm.; width 1.4–2.0 mm. District of Columbia and Indiana..... **variolata** n. sp.

Form nearly similar but blackish, the elytra feebly rufescent, the under surface wholly deep black; legs black, the tibiæ palish basally, the femora feebly rufescent toward base; vestiture as in the preceding, cinereous-white; head smaller, nearly as in *cryptica*, indented and striate; antennæ similar but with darker scape, not quite so long as in *variolata;* prothorax nearly similar but much more distinctly exceeding the head in width; elytra nearly similar but flatter and with the carina along the line of flexure very strong, sometimes prominent, the two denser whitish lines distinct; punctures rather strong and close-set, the black spots and posterior macula as in *variolata;* flanks blackish throughout, very closely and strongly punctate; femora rather strongly clavate; fifth ventral (♂) nearly as in *cryptica*. Length (♂) 4.0–5.5 mm.; width 1.7–2.0 mm. Maine (Monmouth),—C. A. Frost..... **frigida** n. sp.

12—Form oblong, moderately stout, depressed, the lateral elytral carina fine and prominently elevated; color blackish, the elytra piceous throughout; pubescence close, minute, fusco-cinereous; under surface and legs black, the femora rufo-piceous at base; head indented, opaque; antennæ (♀) almost twice as long as the body, infuscate, the scape black; prothorax twice as wide as long, prominently rounded medially at the sides, which are thence oblique to apex and base, the sides of the apex swollen; spicule straight, acute, projecting perpendicularly from the oblique side at basal fifth; surface finely, rather closely punctate, dull, the median dark spots well developed but not tumid; elytra twice as long as wide, parallel, arcuately oblique posteriorly, dehiscent at apex, the external angle dentiform; surface with moderate and well spaced punctures and very small scattered spots of black, the posterior macula large, oval, truncated by the carina; two discal paler and denser lines evident; flanks closely pubescent; strongly, rather closely punctate; hind femora distinctly clavate apically though rather slender. Length (♀) 6.0 mm.; width 2.0 mm. New York. . **binocularis** n. sp.

13—Form oblong, depressed as usual, black, the elytra dull rufous, clothed moderately densely with fine fusco-cinereous pubescence; under

surface and legs black, the tibiæ and femora pale basally; head, prothorax and elytra increasing equally and moderately in width, the antennæ dull rufous, variegated with black as usual, the scape black, twice as long as the body (♂) or a little less (♀); prothorax short and transverse, two-thirds (♂) to once (♀) wider than long, almost parallel, swollen feebly at the sides medially, the spicule acute, near basal fifth; surface dull, finely, not densely punctate, the four spots well developed, not tumid; elytra parallel, rounding at the sides behind, the angles dentiform; lateral carina sharp but not elevated; surface sparsely, moderately punctate, the black spots irregularly distributed, large, equal and circular, the ashy discal lines wholly obsolete; flanks rufescent, strongly and closely punctate; femora strongly clavate, the posterior of the female more slender but distinctly clavate; fifth ventral (♂) slightly longer than the fourth, rounded, the apex rather narrowly and feebly truncate. Length (♂ ♀) 4.2–5.5 mm.; width 1.4–1.9 mm. Indiana and New York (Lake Champlain). The New York example has much darker plumbeous vestiture.....**aspersa** Say

Form more rhomboidal, not very stout, feebly convex, infuscate, the elytra not paler except on the flanks; under surface and legs dull rufous, the femora and tibiæ black distally, the tarsi blackish; vestiture of small decumbent hairs even, fusco-cinereous, not very dense; head indented, opaque, rather small, the prothorax broader but with the difference less notable than that between the prothorax and elytra; antennæ (♂) as in *aspersa* but longer, two and one-half times as long as the body; prothorax two-thirds wider than long, prominently rounded at the sides medially, the sides thence oblique to apex and base, the sides of the apex rounded, not tumid; spicule acute, just behind basal fourth; surface concave along the base, somewhat shining, finely, not densely punctate, the four dark spots not tumid; elytra much wider than the prothorax, with widely exposed and rounded humeri, rather strongly cuneiform, with straight sides, feebly rounding apically to the acute and subspiniform angles; surface strongly, moderately closely punctate, the punctures tending to very irregular lineal arrangement, the black spots very small, sparse, uniform; discal lines very feeble; lateral carina fine and very acute, somewhat elevated; flanks coarsely, very deeply and densely punctate basally, rather finely and less closely apically; femora strongly clavate; fifth ventral (♂) longer than the fourth, rather narrowly rounded, the apex narrowly subtruncate, the fourth segment broadly and very feebly sinuate. Length (♂) 5.3 mm.; width 1.7 mm. District of Columbia.....**vigilans** n. sp.

14—Body very stout, feebly convex, flattened medially, dull black, the very minute and rather loose vestiture blackish-brown and uniform, more cinereous but extremely minute beneath and on the legs; under surface black, the legs black, the tibiæ feebly picescent basally, the femora bright red in basal half or more; head well developed, dull black, the antennæ (♀) dull black throughout and slightly less than twice as long as the body; prothorax barely more than one-half wider than long, slightly wider than the head and very

much narrower than the elytra, almost parallel, the sides feebly prominent medially, the spicule strong, near basal fourth; surface dull black, rather finely but very deeply and densely punctate; elytra broadly cuneiform, three-fourths longer than wide, with very widely exposed and slightly rounded humeri, within which the surface is somewhat impressed, the sides just visibly sinuate for a short distance behind the humeri, thence converging and feebly arcuate, then gradually more strongly to the apical angle, which is produced and spiculiform; surface uniform in sculpture and vestiture but flat medially and, except basally, sloping at the sides to the lateral carina, which is very finely acute and subprominent; punctures strong but not very coarse and notably close-set; flanks more shining, strongly and closely punctate and picescent; femora clavate, the posterior (♀) more slender though rather distinctly clavate distally. Length (♀) 5.9 mm.; width 2.25 mm. Florida. **femoralis** Hald.

15—Elongate, subparallel, dark testaceous, clothed throughout very densely with conspicuously pale cinereous-white pubescence; head well developed, indented; antennæ testaceous, blackish apically, the scape sometimes piceous, twice as long as the body (♂) or a little less (♀); prothorax subsimilar in the sexes, about three-fourths wider than long, subparallel, the spicule rather strong, at basal fifth; surface densely cinereous, the sculpture concealed, the four black spots well developed; elytra three-fourths longer than wide, the punctures strong and rather close when exposed but normally entirely concealed by the vestiture, the spots of blackish tint small, occasionally subobsolete, scattered, the posterior discal spot relatively very small and sometimes wanting; lateral carina fine, rather prominent; apical angles dentiform, somewhat blunt; flanks moderately punctate, closely so, the cinereous vestiture distinct but less dense than above; male with the hind legs rather long, approaching *Anisopodus*, the fifth ventral equal in length to the preceding, broadly rounded, with a feeble and moderately narrow apical sinuation. Length (♂♀) 5.0–6.3 mm.; width 1.8–2.35 mm. California (Sta. Cruz Mts.)..... **californica** Csy.

Maculata Hald., is a very peculiar species, universally misidentified in collections; it is probably of very local distribution on the eastern Appalachian slopes; *nigrella* Hald., is also a distinctly characterized form, not of wide dispersal; in fact most of the species seem to be narrowly circumscribed in habitat and, although the Catskill example of *cryptica* described above is very similar to the Indiana exponents, there is a certain quality in the vestiture which may indicate a difference, racial or otherwise. The three species *variolata*, *cryptica* and *frigida*, of the above table, are mutually allied and, although easily differentiable on inspection, do not have any marked structural differences that can be expressed

very convincingly. In *variolata* the head is relatively larger than in the other two, and *frigida* is blacker, as well as shorter and broader in form; other divergencies may be inferred from the descriptions. In *lentiginosa* the shorter basal joint of the hind tarsi is doubtless due to some extent to the female sex of the type and in the male it is probably a little longer; but this species is very distinct in vestiture, maculation and in other features.*

Urographis Horn.

We now come to a part of the series in which the genera are confused, owing in considerable part to the fact that the *Graphisurus pusillus* of Kirby had, before the discussion of it by G. H. Horn (Tr. Am. Ent. Soc., 1880, p. 128), been identified solely by surmise. LeConte made it a synonym of *Cerambyx fasciatus* Degeer, which would have given the name *Graphisurus* to the genus containing that species and *triangulifer* Hald. Dr. Horn later (l. c.) gave closer study to Kirby's description and came to the conclusion that *pusillus* was the same as *Leiopus biguttatus* Lec., which conclusion may or may not be correct. Mr. Gahan has recently erected the genus *Ceratographis* for *Leiopus biguttatus* Lec.

The writer lately came into possession, through the kindness of Mr. C. A. Frost, of a series of small specimens, transmitted under the name *Acanthocinus obsoletus*. A mere casual glance sufficed to show that they were not *obsoletus*, although perfectly congeneric, being much smaller, narrower and with smaller, closer elytral punctures toward base. Now on examining Dr. Horn's transcription of Kirby's diagnosis of *pusillus*, four facts and four only are to be seriously considered, for the others would fit any one of half a dozen species in several genera. These four determinative statements are (1) position of the thoracic spines "toward base," (2) the negative evidence afforded by failure to mention any erect elytral setæ, (3) the rounded apices of the elytra and (4) the size of the body—4¼ lines or 8.5 mm. All of these statements fit perfectly the series sent me by Mr. Frost, taken by him at Monmouth, Maine, and I have no hesitation in definitely deciding that they

*Many of the statements made by Hamilton in his review of *Hyperplatys* (Tr. Am. Ent. Soc., 1896, p. 129) are incorrect; furthermore he did not identify a single species correctly, excepting the very distinct *californica* and *femoralis*, and in these he overlooked the most important specific characters.

represent the true *pusillus* Kirby. In these Monmouth specimens the elytral apices are broadly rounded, with scarcely even a trace in any one of them of the narrow oblique truncature of *obsoletus*. It only remains, therefore, to designate *obsoletus*, *obliquus* and other similar forms, as detailed further on, now figuring under *Acanthocinus* —where they never really belonged, the thoracic processes being spinose and not dentiform and noticeably more posterior in position —by the name *Graphisurus* Kirby and to restore the name *Urographis* Horn to *triangulifera*, *fasciata* and related species, as suggested above.*

The genus *Urographis* is composed at present of a very limited number of species, all of the Atlantic regions and distinguished from any of the more typically Acanthocinid genera which follow, by the shorter antennæ, rather less basal position of the thoracic prominences, which are dentiform rather than spiniform and by the presence of erect sparse black hairs on the elytra. The three species and one subspecies in my cabinet may be outlined as follows:

Last dorsal segment (♀) very long, gradually finely pointed, convex and with a dorsal stria basally, the fifth ventral of the female greatly prolonged into a tube-like process, which is very deeply and angularly

* There are, however, some points that I fail to comprehend fully in this connection. Dr. Horn (l. c.) states that *Graphisurus*, as represented by *biguttatus* Lec. (*pusillus* Kirby) is in all respects a *Lepturges*, in which the thoracic spine is at a distance from the base—agreeing with my identification as above,—the female with an ovipositor about a third as long as the body,—also agreeing passably well—and having *sparsely placed erect hairs on the elytra*. This last statement is completely at variance with my determination from the Monmouth specimens, and is not supported by LeConte's definition of *biguttatus* or Kirby's description of *pusillus*, where no erect hairs are mentioned; and again, through the association of the former by LeConte with *symmetricus* and other true Lepturgids, an absence of erect hairs might be inferred to be still more likely. Then, on the other hand, LeConte places *biguttatus* with *symmetricus* and others, having an acutely angulate mesosternum. In my interpretation of *pusillus*, which is quite certainly not *Leiopus biguttatus* Lec., the middle coxæ are well separated, the mesosternum not angulate but broadly obtuse, and there are no vestiges of erect hairs on the elytra, the conditions throughout being exactly similar to those of *obliquus* Lec. I think that my interpretation of *pusillus*, through the Monmouth specimens, is correct, and as LeConte's *biguttatus* is surely something else— I formerly had an example of *Urographis hebes* under this name in my collection, which could not be true because of the broadly truncate elytra; widely separated middle coxæ and short antennæ,—which according to Horn has erect hairs, rounded elytral tips and narrowly separated middle coxæ, I have not seen it, and the name *Ceratographis* given it by Gahan is probably warranted; but I have nevertheless retained the name *Urographis*, because of certain doubts regarding the generic identity of *Ceratographis biguttata* and *Urographis fasciata*.

incised at apex; body moderately broad, narrower in the male, blackish, sometimes rufescent, the elytra with cinereous pubescence and numerous blackish punctures and with the basal region, a broad oblique fascia before and another more solid but zigzag behind, the middle, blackish and more or less comminuted; antennæ (♂) two-fifths, or (♀) one-fifth, longer than the body. Length—to end of elytra as in all such cases—(♂ ♀) 9.0–13.3 mm.; width 2.9–4.6 mm. New Jersey to Lake Superior. Fourteen examples. [*despecta* Lec.].
fasciata DeG.

A—Similar in general form, sculpture and ornamentation but smaller and of evidently narrower, more parallel form, with smaller prothorax and somewhat shorter antennæ; ovipositor more slender but otherwise similar; last dorsal (♀) more rapidly cuneiform, more exserted behind the elytra, with the apex narrower than in *fasciata*, the ventral emargination similar. Length (♂ ♀) 9.5–13.0 mm.; width 2.8–4.3 mm. New York (West Point),—Wirt Robinson. Apparently common and described from seven examples.
reducta n. subsp.

Last dorsal segment (♀) very much shorter, broader and flatter, without trace of median stria basally, the fifth ventral of the female having the produced portion much less extended and with its apex shallowly and evenly sinuate.....2

2—Body in sculpture, vestiture and color very much as in *fasciata*, rather narrow, parallel, subdepressed; head with a deep entire median stria; antennæ nearly one-half longer than the body, the joints cinereous in nearly basal half; prothorax four-fifths wider than long, the sides prominent and gradually obtusely angulate just before basal third; surface with the cinereous hairs broadly replaced medially and along the apex in great measure by short and sparser brown pubescence, the punctures fine and sparse, with a series of coarse punctures along the base; scutellum wider than long, subtruncate; elytra but little more than twice as long as wide, with numerous moderate brown punctures, asperulate basally, the cinereous vestiture replaced largely by brown at base, in a lateral spot before basal third and in a sharply defined narrow transverse fascia at apical third, which is but slightly oblique and but little distorted; apices broadly, rectilinearly and transversely truncate, the angles obtuse and blunt; erect hairs well developed; femora moderately clavate (♀), very strongly (♂); last dorsal (♀) projecting behind the elytra less than three times as long as wide, finely margined, cuneiform, with feebly arcuate sides and blunt apex. Length (♂ ♀) 9.6–10.8 mm.; width 3.0–3.3 mm. Iowa (Keokuk) and New York. Three examples.....**hebes** n. sp.

Body larger, more convex and much stouter, more densely and compactly clothed with cinereous vestiture; color rather blackish-brown; head with the impressed stria obsolescent on the front, the antennæ (♀) longer than the body, the joints cinereous basally as usual; prothorax less than twice as wide as long, the lateral tooth at basal two-fifths; surface densely cinereous, with a complex medial pattern of four velvety-black spots, separated by a dark region, the sides

with three or four small dark spots; elytra densely cinereous, with small sparse punctures and a large basal area, a short lateral oblique disintegrated fascia near basal third, a large oblique spot, not attaining the suture, solid and well defined at apical third, and a smaller and sharply defined marginal spot near the apex, brownish-black; last dorsal (♀) nearly four times as long as wide, parallel, with feebly arcuate sides, gradually converging posteriorly to the bluntly rounded apex. Length (♀) 11.8 mm.; width 4.4 mm. Ohio.
triangulifera Hald.

The last two species are rare in collections and I have at present but a single female of *triangulifera*. One male of *fasciata* of my series has a narrower outline, with relatively larger prothorax, more nubilate markings and more narrowly sinuato-truncate elytral apices, than any other, but additional examples are essential before coming to any conclusion concerning it. *Hebes* doubtless represents *Leiopus biguttatus* in many collections, but reasons are given in the footnote on p. 332 for concluding that there can be no such identity. The length of *biguttatus*, as given by LeConte, is 8.2 mm.; possibly the elytral tips may be narrowly truncate.

Graphisurus Kirby.

The species hitherto placed under *Acanthocinus* in our lists form an isolated group, having composite characters and affinities, which, as explained above under *Urographis*, should now take the name *Graphisurus* Kirby. The prominences of the prothorax, for instance, are not dentiform as in *Urographis* and the European *Ædilis edmondi* (*Acanthocinus*) as figured by Duval, but truly spiniform, more as in the Lepturgids, and are generally more posterior in position than in either *Urographis* or *Acanthocinus*, though never quite so nearly basal as in *Lepturges*, and the antennæ are very long and filiform as in the latter group, but the body is very different in facies, being relatively larger in size and with radically different type of ornamentation, the latter more remindful of *Urographis*. In the dense inferior fringe of hairs of the antennal joints, it however differs from all of the other American genera, the only vestige of this fringe in the latter being a very few short erect stiff black setæ, one to three or four perhaps on each joint, not constituting an analogy in any sense. The elytra have no erect hairs as they do in *Urographis*, this feature being present among Lepturgid genera—omit-

ting *Dectes* and *Colobothea* for the present—only in *Valenus* Csy., *Ceratographis* Gahan and *Chætanes* and *Phrissolaus* Bates. Another of the more important characters distinguishing *Graphisurus* from *Acanthocinus* is the much greater length of the basal joint of the hind tarsi in the former. Although there are remarkable antennal differences to be noted among the rather numerous species of *Graphisurus*, I cannot find any good reason for dividing them further than subgenerically; those species known to me may be defined as follows:

Male antennæ simple; body smaller as a rule. Atlantic to Pacific. (**Graphisurus** in sp.) 2

Male antennæ with an external knob at the apex of the fifth joint, the eleventh joint without vestige of terminal appendage; ornamentation similar. Pacific and Sonoran regions. (Subgen. **Canonura** nov.) .. 9

Male antennæ with an external knob at the apex of the fourth joint, the eleventh not appendiculate; body broader, flatter, more oblong and with strongly modified ornamentation, which is however derivable from the type prevailing in the two preceding groups. Atlantic region. (Subgen. **Tylocerina** nov.) 11

2—Elytra narrowly and very obliquely truncate at tip and having barely a vestige of raised discal lines or rows of dark spots 3

Elytra broadly rounded at tip and with more or less feebly raised lines which bear small spots of blackish tint 4

3—Body oblong, moderately convex, the elytra flattened between the vestigial lateral lines; color blackish, sometimes paler, with cinereous and blackish vestiture, the latter forming three irregular oblique fasciæ on each elytron and some basal spots, the pronotum irregularly maculate and with two more distinct tumid blackish subapical spots; antennæ (♀) one-half longer than the body, with joints three to six gradually diminishing in length; prothorax nearly two-thirds wider than long, the lateral prominence acutely spiculiform and at basal third; elytra oblong, parallel, much wider than the prothorax, rapidly and subcircularly rounded at apex; fifth ventral (♀) with a rounded emargination, fully as deep as wide, fringed with very short hairs, the last dorsal gradually almost rectilinearly narrowed throughout to the finely pointed apex, much shorter than the long black egg-tube, as usual in the genus; male not at hand. Length (♀) 11.5–13.8 mm.; width 3.6–4.3 mm. New York to North Carolina. **obsoletus** Oliv.

Body more elongate, larger in size and rather more convex, similar in color and maculation, except that the oblique fasciæ of the elytra are more widely separated; antennæ (♀) similar, except that joints three to six decrease more rapidly, thence of equal length to the tip, or (♂) two and one-half times as long as the body, more densely fimbriate beneath and with the outer joints gradually though slowly increasing in length, the eleventh two-fifths as long as the body; prothorax less transverse, one-half wider than long, otherwise

nearly similar, finely, sparsely punctate, with coarser punctures aggregated near the base; elytra longer, parallel (♀) or feebly cuneiform (♂), the punctures similarly coarse, deep and perforate, well separated, the outer raised line distinct before the middle nearly to the humeri; femora strongly clavate in both sexes; female with the fifth ventral very deeply emarginate at tip, the emargination fringed with long dense white hairs, the last dorsal segment rapidly narrowing to a point some distance from the tip, thence narrow and parallel to the acute or narrowly blunt apex; male with the fifth ventral more shallowly sinuate at tip, the last dorsal short, very narrowly, deeply and acutely incised medially, the lobes rounded. Length (♂ ♀) 14.0–15.5 mm.; width 4.6–4.9 mm. Florida.

floridanus n. sp.

4—Antennæ (♂) not or but little more than twice as long as the body, the outer joints not increasing noticeably in length.....5

Antennæ (♂) two and one-half to nearly three times as long as the body, the outer joints distinctly increasing in length.....6

5—Last antennal joint (♂) without trace of a terminal process. Body oblong, not very elongate, feebly convex, the elytra slightly cuneiform in both sexes, blackish, clothed with cinereous vestiture, variegated very confusedly with blackish spots; head with a deep entire median stria; lower lobe of the eyes elongate; antennæ slender, the joints cinereous at base, three-fourths longer than the body in the female; prothorax short, not quite twice as wide as long, the lateral spicule near basal third; surface nearly even, the anterior tumidities almost obsolete, rather finely and not densely punctate, with four ochreous spots anteriorly in transverse line, broadly concave and a little more punctate at base; elytra less than two and one-half times as long as wide, wider than the prothorax, the apices broadly rounded, the elevated lines obsolete but with the lineate black spots rather conspicuous, mingled with many other small black spots, the antemedian oblique fascia very indistinct, the post-median, and a subsutural spot near the apex, rather well defined; punctures moderate, very deep and close-set basally, sparse and less distinct apically; female with the last dorsal flat, narrow, gradually cuneiform to the obtuse apex, the moderately produced last ventral with the rather narrow emargination bearing a long dense fringe of whitish hairs; male with the supplementary last dorsal bilobed, sinuate medially. Length (♂ ♀) 8.5–11.0 mm.; width 2.6–3.2 mm. Maine (Monmouth),—C. A. Frost.....**pusillus** Kirby

Last antennal joint (♂) with a distinct terminal appendage, which however is short, not much over four times as long as wide. Body rather narrower and more convex, black, with dusky maculation, together with some cinereous, especially separating the conspicuous small black spots of the strongly elevated elytral lines; head strongly impressed, the stria obsolete near the antennal tubercles, the lower lobe of the eyes broader, only a little longer than wide; antennæ (♂) twice as long as the body, the joints cinereous in basal half; prothorax three-fifths wider than long, the spicules just before basal third; surface strongly but very sparsely punctate and with two antero-

posteriorly diverging lines of cinereous, beginning on the anterior tumidities, the punctures not coarser but finer near the base; elytra narrow but wider than the prothorax, feebly cuneiform, less than two and one-half times as long as wide, evenly rounding at apex to the bluntly rounded sutural angles; surface with rather strong and close-set punctures, the two oblique fasciæ tolerably distinct; supplementary dorsal segment (♂) narrowly and distinctly bilobed, the rounded separating sinus much larger than in the preceding; femora clavate, the abdomen with close-set denuded black spots. Length (♂) 9.0 mm.; width 2.6 mm. New Mexico. . **acomanus** n. sp.

6—Elytra each with two oblique and more or less disintegrated fasciæ nearly as in *acomanus*, and also numerous other small black spots arranged along the slightly elevated discal lines. 7

Elytra with solid velvety-black and irregular sharply angulate areas arranged in the usual two irregular oblique fasciæ, the spots of the raised lines subconfluent; body more broadly oblong. 8

7—Form moderately broadly oblong, with subparallel elytra, each broadly rounded at apex; head larger than in the preceding, otherwise similar, the antennæ similar but much longer, the process of the last joint (♂) very much longer, eight times as long as wide, with the terminal brush of hairs distinct; joints ashy in basal half, the ashy part extending much more apically on the longer last three joints; prothorax one-half wider than long, the spines short, sharp, slightly recurved at basal third; surface strongly but very sparsely punctate, with four anterior cinereous spots, the two inner on the inner sides of the tumors, the surface thence obliquely cinereous to the base; elytra coarsely, extremely densely punctate between the lines; supplementary dorsal (♂) broadly bilobed at tip, the lobes widely separated by a shallow angular sinus; last dorsal (♀) produced and subparallel apically to the very obtuse and densely fringed tip. Length (♂♀) 10.7–12.0 mm.; width 3.1–3.8 mm. New Mexico and Colorado. . . . . **obliquus** Lec.

A—Similar to the preceding but smaller and relatively narrower, almost parallel, the anterior fascia broader and more diffused, the posterior narrow and similar, the punctures and ornamentation nearly similar; sides of the prothorax with a very small and almost obsolete spinule, projecting from the swelling at basal third; supplementary dorsal (♂) narrower, the lobes narrower and much less obtuse, separated by a very much deeper and angulate emargination. Length (♂) 10.5 mm.; width 3.0 mm. Mexico (Chihuahua),—C. H. T. Townsend. . . . . **chihuahuæ** n. subsp.

B—Nearly similar to *obliquus* in form, color and ornamentation, but with the elytral punctures more widely separated and not so coarse, the elytral apices narrower, subtruncate; supplementary dorsal (♂) differing materially in having the lobes smaller, more rounded and separated by a rounded sinus of varying depth, the sinus larger than the lobes; antennæ more slender, with the terminal process nearly similar, long. Length (♂♀) 10.5–11.0 mm.; width 3.1–3.4 mm. New Mexico (Fort Wingate). **sedulus** n. subsp.

Form narrow, more subcylindric, the vestiture and sculpture almost as in the preceding, except that the cinereous vestiture of the upper surface is in greater abundance, whiter and more conspicuous; head moderate, the eyes more widely separated, the antennal prominences less strong and with the surface between them much flatter, the antennal scape more swollen apically than in *obliquus;* lower lobe of the eyes longer; antennæ two and three-fourths times as long as the body, similar, except that the outer joints are less cinereous, the terminal process much shorter, only four or five times as long as wide; prothorax shorter, more than one-half wider than long, the spinules distinct, at basal third, the surface similar, except that the punctures are rather coarser and more numerous; elytra nearly similar, except that the punctures are smaller and sparser, everywhere well separated; supplementary dorsal (♂) narrower, its apex almost entirely occupied by an evenly rounded and moderately deep sinus, the lobes very narrowly rounded at their apices; fifth ventral with the cinereous vestiture uniform, the apical fringed sinus as usual. Length (♂) 9.5 mm.; width 2.8 mm. California (Siskiyou Co.).....**pacificus** n. sp.

8—Body (♀) rather broadly oblong, parallel, black, the under surface obscure rufous, the abdomen black; head moderate, the antennæ much longer than the body; prothorax rather small, three-fourths wider than long, the spicules distinct, at basal third, the sides feebly and evenly oblique thence to the apex but sinuate before the prominences; surface with very sparse moderate punctures and four longitudinal cinereous vittæ, the two inner arcuately diverging from the subapical tumors; elytra much wider than the prothorax, with very broadly exposed and basally transverse humeri, the sides rounding behind to very near the suture, each narrowly rounded at apex; surface obliquely impressed behind the humeri, subdisconnectedly lineate with deep black on the feebly raised lines, the flanks basally, an adjoining discal spot at one-third and an elongate and more sutural spot before the middle, a narrow irregular black fascia behind the middle and prolonged along the first and second raised lines to near the apex and there inclosing a cinereous spot, deep and solid velvety-black; punctures between the raised lines moderate in size but deep and close-set, last dorsal (♀) flat, gradually attenuated to near the apex, thence rather narrowly produced to the moderately acute and densely silvery-fimbriate apex, the fifth ventral much produced, deeply and angularly incised at apex. Length (♀) 12.2 mm.; width 3.7 mm. New Mexico. .**angulosus** n. sp.

9—Dark areas of the pronotum and elytra solid and abruptly defined. Body dark brown in color, the paler vestiture only moderately dense and pale brownish; antennæ (♂) three and one-half times as long as the body, pale cinereous throughout, the dense erect cinereous fringe as long as one-half the thickness of the joints, the outer joints rapidly very long; prothorax one-half wider than long, the lateral prominences large, very acute, with the apices feebly flexed backward, less basal than in any of the preceding species, being near basal two-fifths; surface with rather small sparse punctures, brown,

with an irregular pale lateral area enclosing some dark spots; elytra feebly cuneiform, a little more than twice as long as wide, the apices broadly rounding to the blunt sutural angles, rather finely, sparsely punctate, more coarsely, densely and granularly so basally, the basal sixth—somewhat raggedly—and an oblique broad fascia before and another behind the middle, also a broad transverse fascia near the apex, dark brown, the paler areas with a few brown dots, a row of the latter along the suture also evident; male with the fifth ventral circularly sinuate at tip as usual. Length (♂) 19.0 mm.; width 6.0 mm. New Mexico (Fort Wingate).....**spectabilis** Lec.

Dark areas of the upper surface blacker in color, less solidly defined and more comminuted at the edges, the basal dark area very much shorter; prominences at the sides of prothorax large and acute, perhaps very slightly more posterior in position; under surface with close cinereous pubescence, speckled with black laterad. Pacific coast fauna.....10

10—Body large and moderately stout, broadly convex, piceous-black, the paler dense vestiture cinereous; antennæ (♂) very long, rather stout basally, three and three-fourths times as long as the body, the last joint three-fifths as long as the body; joints three to five cinereous, with black apices, the outer joints cinereous; dense white fringe a little longer than half the thickness of the joints; prothorax much more coarsely and less sparsely punctate than in the preceding, more glabrous but with four fulvous spots in transverse line anteriorly; elytra nearly similar in form but broader, with similarly placed fasciæ and scattered dark dots; punctures moderate and sparse, becoming coarse and close basally but granose only very near the base, the oblique impression, extending posteriorly from near the middle of the base, less deep than in *spectabilis;* legs longer and still stouter, the femora rather less abruptly though similarly very strongly clavate; male with the last true dorsal angularly emarginate, the notch occupying the entire apex, not as deep as wide, with its sides straight, the supplementary dorsal broadly bilobed at apex; fifth ventral more finely and feebly pubescent medially; female shorter than the male, with more parallel elytra and very much shorter and more slender antennæ, less than twice as long as the body, with the joints not lengthening apically, the fifth dorsal broad, rapidly and subsinuously narrowing distally to the rather acute, densely albido-fimbriate apex; otherwise nearly similar to the male. Length (♂ ♀) 18.0–22.0 mm.; width 6.0–6.4 mm. Washington State to northern California. [*Eutrypanus princeps* Walk.].....**princeps** Walker

Body much narrower and smaller in size, similar to the preceding in color, ornamentation and sculpture, except that the punctures of the pronotum and elytra throughout are a little smaller and sparser and the oblique dark irregular fasciæ of the elytra relatively narrower; antennæ (♂) shorter, more slender, not three and one-half times as long as the body, with joints three to seven cinereous with black apices, the fringe very much shorter, less than half as long as the thickness of the joints; spines of the prothorax shorter, less acute;

elytra nearly two and one-half times as long as wide, only just visibly cuneiform; last true dorsal segment with an evenly rounded emargination, wider than deep and not occupying the entire apex, the supplementary segment much narrower than in *princeps*, bilobed, the lobes more prominent and much more narrowly rounded; fifth ventral uniformly clothed throughout; hind femora rather more feebly and much more abruptly and more apically clavate. Length (♂) 14.5 mm.; width 4.5 mm. California (Siskiyou Co.),—Koebele. **vinctus** n. sp.

11—Form (♂) moderately broad, dark brown, the vestiture minute, dense, luteo-cinereous; head relatively rather small, the antennæ three and three-fourths times as long as the body, slender, the basal joint cylindric, gradually obliquely narrowed at base, the vestiture luteo-cinereous, brown toward the articular apices, the fringe not so compact or uniform as in *spectabilis* and allies but loosely composed of longer and shorter hairs, denser and more uniform toward the apices of the joints; prothorax scarcely more than one-half wider than long, the slightly reflexed acute spur, projecting from the lateral swellings, at basal two-fifths; surface with very sparse and moderate punctures and a transverse entire ridge near the apex, interrupted only at the middle, also with two narrow dark vittæ, very broadly interrupted medially; elytra twice as long as wide, parallel, rounding behind to the rounded sutural angles, the pale brown vestiture with four more or less incomplete series of dark dots, placed on feebly elevated lines, also with a long vitta occupying the flanks from base for two-fifths, then prolonged in a slender streak for some distance and angulate upwardly near basal third, extending obliquely on the disk for a short distance, a longitudinal basal streak at inner third and a long cuneiform anteriorly incised and posteriorly divided spot at inner third behind the middle, all of velvety black; under surface rufous; femora strongly clavate; anterior tarsi moderate, the second joint wider than long; last true dorsal segment broad, bilobed, with a large rounded median sinus. Length (♂) 19.5 mm.; width 6.2 mm. Pennsylvania.....**nodosus** Fabr.

Form (♂) very much broader, darker and blackish in color, the vestiture similar but more infuscate, the elytral maculation almost similar; head larger; antennæ nearly similar but a little less slender, with the cylindric basal joint stouter and more abruptly obliquely narrowed at base; prothorax shorter, very much more transverse, twice as wide as long, the lateral plectra nearly similar, the punctures even sparser, the central elongate callus also denuded, differing very much in having four widely separated tubercles in transverse line near the apex instead of a continuous medially interrupted ridge, the fine black vittæ similarly only visible near apex and base; elytra much broader, distinctly less than twice as long as wide, the sides rounding behind to a broad transverse and rectilinear truncature at apex, defined externally by an obtuse but distinct angle; under surface rufo-piceous; femora similar, the anterior tarsi larger, more dilated but with the second joint as long as wide; last true dorsal segment nearly similar, except that the sinus is broader and shal-

lower. Length (♂) 20.8 mm.; width 7.7 mm. North Carolina (Southern Pines),—Manee.....**laticollis** n. sp.

The female of most of the species seems to be taken much less frequently than the male and I have not seen female examples of either of the last two described above. *Acanthocinus linearis* Skin. (Ent. News, 1905, p. 290) from southern Arizona, I have not seen; its scheme of ornamentation seems to be radically different and there may be some doubt as to the generic reference.

The two following genera are rather anomalous Acanthocinids, and they cannot be placed in very satisfactory succession with any of the preceding.

Dectes Lec.

This genus is allied in most of its structural characters with *Lepturges*, but differs completely in general habitus, owing to its long parallel subcylindric form of body, and it differs structurally in its finely faceted eyes, thick tarsi with shorter first joint of the posterior, numerous short erect setæ of the elytra and shorter antennæ. In the nature and position of the thoracic spines and in the very approximate globular coxæ it is purely Lepturgid. It is very widely distributed throughout North America, excepting the Pacific coast regions, and includes numerous species, which because of their uniform vestiture and general similarity of form, have never been studied attentively. Some of the forms described below are undoubtedly true species; others may prove to be rather subspecies, when the meaning of that expression shall have been definitely determined. They are very uniform in appearance, being cylindrical and densely clothed with short ashy hairs, with short stiff setæ arising from the elytral punctures, so that these features will not be mentioned in the following short diagnoses:

Elytra sharply truncate at apex, the external angle distinct and sometimes slightly produced posteriorly.....2
Elytra broadly rounded, sometimes feebly truncate but with the external angle always rounded or indistinct.....6
2—Elytra more elongate, always more than twice as long as wide in both sexes.....3
Elytra shorter, not more than twice as long as wide.....4
3—Middle coxæ almost contiguous (♂), narrowly separated (♀); body larger in size than in any other species, the elytral humeri never black; antennæ similar in the sexes, a fourth longer than the

body, the scape unusually bent at apex, with the external angle acutely prominent; last dorsal (♀) gradually cuneiform, with the apex more abruptly and broadly arcuate; fifth ventral (♂) as long as the fourth, rather narrowly sinuato-truncate at apex, or (♀) one-half longer than the fourth, with the apex still more narrowly sinuato-truncate. Length (♂♀) 8.0–10.0 mm.; width 2.2–2.8 mm. Pennsylvania (Harrisburg),—A. B. Champlain. Abundant.

spinosus Say

Middle coxæ equally and narrowly though distinctly separated in both sexes; body small and notably slender (♂), or larger and stouter (♀), the humeri always having a small black spot; elytral apices truncate, with the external angle still more sharply marked than in the preceding; last dorsal segment (♀) evenly and rather acutely parabolic in form; body much smaller, the sexual characters nearly similar, except that the fifth ventral (♂) is distinctly longer than the fourth and more narrowly truncate at tip; antennal scape somewhat similar. Length (♂♀) 6.5–8.0 mm.; width 1.75–2.25 mm. Colorado, Montana and New Mexico. Abundant....**alticola** n. sp.

4—Integuments piceo-rufous in color; body stout; prothorax unusually large, with a very stout oblique spine; humeri brown; elytral apices transversely truncate but with the external angle not prominent though evident; last dorsal segment (♀) not projecting behind the elytra, small, parabolic; mesosternum triangular, the coxæ narrowly though distinctly separated. Length (♀) 8.2 mm.; width 2.4 mm. Arizona (probably southern).....**thoracicus** n. sp.

Integuments black; body stout, more abbreviated than in any other species, the prothorax relatively less developed, with the usual spines, the humeri black at base.....5

5—Elytral truncature subsinuate, the external angle notably prominent posteriorly; middle coxæ (♂) very narrowly, or (♀) much more widely, separated; fifth ventral (♂) a little longer than the fourth, rather narrowly truncate at apex; sides of the prothorax before the spine only very feebly converging to the apex, sometimes subparallel. Length (♂♀) 6.5–7.8 mm.; width 1.8–2.2 mm. Long Island (Willets Point) and North Carolina (Southern Pines),—Manee.

brevis n. sp.

Elytral truncature sharply marked, the external angle distinct but only faintly subprominent; middle coxæ (♂) narrowly though distinctly separated, the fifth ventral segment not longer than the fourth and more broadly truncate at tip; sides of the prothorax more strongly converging and nearly straight before the spine, which is not so abruptly spiculiform as in the preceding. Length (♂) 7.5 mm.; width 2.2 mm. Texas (Brownsville),—Wickham...**latitarsis** n. sp.

6—Middle coxæ narrowly separated as usual.....7

Middle coxæ subcontiguous in both sexes, the mesosternal process abbreviated between them.....8

7—Elytral apices subevenly and rather strongly rounded; integuments black; prothorax parallel in both sexes, equally and moderately punctate; elytral punctures distinct and well separated, the erect setæ very short; body small in size and unusually slender; middle

coxæ separated by a fifth to third of their width; last dorsal (♀) projecting, narrowly parabolic in outline; male with the fifth ventral as long as the fourth, sharply and distinctly sinuate at tip. Length (♂ ♀) 5.7–7.7 mm.; width 1.25–2.00 mm. Arizona (locality unrecorded) ..... **brevisetosus** n. sp.

Elytral apices narrowly and obliquely truncate but with the outer angle very obtuse and blunt; body very small in size, the integuments piceo-rufous; prothorax shorter, wider than long, subparallel, the punctures becoming gradually sparse anteriorly; elytral punctures strong, rather dense, closer than in the preceding, the setæ similarly short; last dorsal segment (♀) scarcely at all projecting, obtusely rounded. Length (♀) 5.7 mm.; width 1.4 mm. Arizona (locality unrecorded)..... **discolor** n. sp.

8—Body small, rather slender in the male, the female stouter and apparently much less abundant; integuments black, the humeri black beneath; prothorax distinctly shorter than wide; elytra rounding at apex and feebly subtruncate to the obtusely blunt sutural angles; female with the last dorsal segment barely exposed, parabolic, the apex narrowly rounded, the fifth ventral one-half longer than the fourth, rounded at tip; male with the fifth ventral not longer than the fourth, broadly sinuate at apex; elytral punctures very close-set, the setæ numerous and well developed. Length (♂ ♀) 6.7–7.6 mm.; width 1.8–2.0 mm. Mexico (Tepehuanes and Durango City, State of Durango),—Wickham..... ***aridus** n. sp.

The species described by LeConte under the name *texanus* is valid, I think without much question, if founded upon a normal specimen, and is so regarded by Bates; the thoracic spines do not diverge obliquely, as in the species above described, but are more parallel with the lateral outline of the prothorax; possibly this may be an individual deformity, but it is impossible to decide at present. This genus is well represented in Mexico and is divided by Bates into two sections, *Dectes* Lec., having the scape of the antennæ not or scarcely flattened beneath and the body densely clothed, and *Canidia* Thoms., having the body sparsely clothed to almost nude and the scape broadly flattened or even grooved beneath.

Colobothea Bates.

In this genus, which is also rather anomalous in form among the other Lepturgids, the sexual characters at the abdominal apex in both male and female become very conspicuous and diversified to such a degree, in forms that otherwise greatly resemble each other, that they serve as the best means of recognizing the rather numerous species. The two following species do not seem to have been included in the material studied by Mr. Bates:

*Colobothea sexualis n. sp.—Rather stout, convex, dark red-brown in color, the maculation luteo-cinereous; head with two narrow pale vittæ; antennæ about two-thirds longer than the body in both sexes, piceous, the joints slightly cinereous toward their bases; prothorax a fifth (♂) to two-fifths (♀) wider than long, feebly swollen at the sides subbasally, convex, with two approximate subentire pale vittæ transversely connected at base and, outside of these, two fine streaks just above the flanks and one at outer fourth near the apex; elytra cuneiform, convex, finely, sparsely punctate, each puncture bearing a short stiff erect black seta, the pale spots comminuted and in somewhat lineal arrangement in about basal third, a large subquadrate and sometimes disintegrated discal spot about the middle, and a few small spots near the apex; carina above the flanks rather obtuse, subduplex. Male with the fifth ventral abruptly upwardly declivous apically, the apex produced medially in a long slender spiniform process, bending downward slightly apically, and, at each side of the line of flexure, a long compressed thin process, projecting posteriorly almost as far as the central process. Female with the last dorsal segment flat, one-half longer than wide behind the elytra, the sides converging, then parallel to the truncate apex, which has several long hairs and, at each side, two long stiff spiniform setæ, the side margins finely cariniform; the fifth ventral is triangular, with narrow emarginate apex and somewhat sinuate sides. Length (♂ ♀) 11.2 mm.; width 4.0–4.2 mm. Honduras.

Allied to *ramosa*, *guatemalina* and *parcens* of Bates, but differs in the sexual characters as inferable from the descriptions.

*Colobothea pleuralis n. sp.—General facies as in the preceding, black, densely clothed with minute blackish-brown vestiture and yellowish-white spots; head with two pale vittæ; antennæ three-fourths longer than the body, nearly as in the preceding; prothorax nearly a fourth wider than long, swollen subbasally, more narrowed thence to the apex than in *sexualis*, convex, having two entire pale approximate medial vittæ, which are transversely united throughout basal half, also a sublateral narrow vitta, slightly interrupted medially and not attaining base or apex; elytra finely, sparsely punctate and setulose as in *sexualis*, cuneiform, the flanks flat, polished, defined above by a very acute prominent carina, the disk with the pale maculation disposed almost exactly as in *sexualis* but with the spots rather less numerous. Male with the fifth ventral plate transverse, abruptly flexed upward medially, the upturned part flat, triangular, concave medially, with its narrow setose apex narrowly emarginate, the emargination filled by two minute short styliform processes, each bearing a long porrect brush of hairs at apex. Length (♂) 10.7 mm.; width 3.8 mm. Panama (Darien).

The acute angle limiting the transverse truncature of the elytral apices externally is much longer and more spiniform here than in *sexualis*, and the form of the fifth ventral plate in the male is completely different, remarkably so for two species which resemble each other so closely to superficial view.

Mr. Bates does not appear to mention the short stiff erect setæ arising from the elytral punctures in this genus; they are very obvious in both of the above species.

Tribe POGONOCHERINI.

Pogonocherus Latr.

The small species of this genus having truncate elytral apices and allied to *penicillatus* and *mixtus*, are very different in appearance from certain larger forms, such as *negundo*, with rounded apices, and should probably constitute a distinct genus; but, as both are distinct in habitus from the European species, with which *crinitus* Lec., is congeneric, no separation should be made except in a general study of the tribe. Excepting the Pacific coast, these allies of *penicillatus* and *mixtus* are rather numerous in the colder parts of North America, to which regions they are virtually limited, but have never formed the subject of special study. The antennæ differ but little sexually and vary from a little longer, to evidently shorter, than the body, the latter generally the case in the female; they are testaceous throughout, the joints gradually black apically, almost nude, but with a loose fringe of rather long, erect and sparsely placed hairs beneath, the scape oval, short and stout, gradually much narrowed toward base. The female has a sharply marked deep transverse excavation at the apex of the fifth ventral, this segment in the male being shorter, unmodified and sinuato-truncate medially at tip; the thighs are moderately but rather abruptly clavate. The species of this group, as represented in my cabinet and including *parvulus*, *simplex*, *alaskanus* and *arizonicus*, the characters of which are drawn from published descriptions, are as follows:

Elytra each with three discal carinæ, the outer two very sharp, the inner more obtuse and bearing tufts of agglomerated erect black hairs, of which one is subbasal.....2

Elytra without acute and sharply marked carinæ, though occasionally strongly and obtusely ridged.....3

2—Prothorax longitudinally plicato-rugose and closely punctate; body stout, piceous, the scattered erect black hairs unusually long; head narrower than the prothorax, which is about a fourth wider than long, evidently wider at apex than at base, the lateral prominences sharply dentiform but not spiculate; surface rather closely pubescent, pale along the apex and base, with two strong polished tubercles and a third, very small and feeble, on the median line behind the

middle; elytra short, much wider than the prothorax, three-fourths longer than wide, parallel, rounding behind to the truncatures, the outer angle distinct but not at all prominent; surface very coarsely punctate, closely and confusedly toward the suture, more sparsely and sublinearly elsewhere, piceous, with an oblique dense cinereous fascia on each from just behind the humeri nearly to the suture at basal third, also variegated with fusco-cinereous and blackish in about apical third; inner ridge with a subbasal cluster of black hairs and also three behind the middle. Length (♀) 5.7 mm.; width 2.0 mm. Maine.....**penicillatus** Lec.

Prothorax confusedly and rather coarsely rugose in sculpture; body a little larger, notably more elongate, nearly black, the vestiture almost as in *penicillatus*, the prothorax even a little more transverse, subsimilar in the sexes, the lateral prominences similar, the tubercles very much flatter and more diffuse and not so shining, being coarsely punctured, the subdepressed median region wholly rugose, excepting a small elongate-oval and feebly convex polished callus which is abruptly defined on the median line near basal third; elytra as in the preceding but more elongate, with the punctures equally close-set but much less coarse, the outer angle at the apices rather more prominent and sharply-marked, the truncatures more sinuate, the antero-lateral fascia narrower though similar in position, the posterior maculation nearly similar, the inner ridge similarly fasciculate, except that there are always four or five fasciculate tufts behind the middle. Length (♂ ♀) 5.4–6.2 mm.; width 1.75–2.0 mm. Colorado. **carinatus** n. sp.

3—Elytra colored and fasciate nearly as in *mixtus* and similarly without ridges, but with a longitudinal series of three fasciculate tufts of short erect black hair on each, posterior to the fascia; elytral apices truncate, the external angle acute and prominent, the sutural angle obtusely rounded; decumbent hairs of the under surface very dense at the apices of the abdominal segments. Length 13 mm.(?). Arizona (Huachuca Mts.).....**arizonicus** Schf.

Elytra with an almost even convex surface, except in *fastigiatus* and *alaskanus*, and strong punctures, confused suturally, sublineate laterally and without trace of fasciculate tufts at any point, except in *alaskanus*.....4

4—Outer angle at the elytral apices always sharply marked, sometimes notably prominent posteriorly.....5

Outer angle very obtuse and more or less feebly defined, sometimes obsolete.....8

5—Size very small, piceous, sparsely pubescent; prothorax (♂) finely rugose or (♀) smooth, with the discal tubercles slightly prominent; elytra testaceous, with nebulous fuscous maculation at the middle, more densely cinereo-pubescent anteriorly, having three subelevated discal lines, the intervals irregularly biseriately punctate; antennæ testaceous, fusco-annulate. Length 3.8 mm. From near the headwaters of the Mississippi River.....**parvulus** Lec.

Size generally much less minute, with a more sharply marked anterior fascia of pale pubescence.....6

6—Prothorax very short, fully one-half wider than long. Body unusually small in size and rather stout; head with the median stria strongly marked; prothorax black, pale at base and apex, confusedly, minutely and densely vermiculato-rugulose, without a polished median spot, the tubercles large, rather prominent, with their summits broadly smooth, the lateral prominences bearing a minute spicule; elytra much wider than the prothorax, short, barely three-fifths longer than wide, parallel, the apices rather deeply sinuate, the outer angle posteriorly spiculiform; erect black hairs few in number and very short; surface unusually finely, moderately closely punctate, confusedly toward the suture, sublinearly toward the sides between the feebly tumescent lines, coarsely on the flanks, the fine and very dense cinereous-white vestiture forming a very large even anterior chevron, attaining the middle of the length, where it joins the confusedly maculate remainder of the surface, the spots fulvous, cinereous and black; at the middle laterally there is a large and unusually sharply defined black area. Length (♀) 4.3 mm.; width 1.6 mm. Massachusetts (Framingham),—C. A. Frost. Bred from *Salix*.....**salicola** n. sp.

Prothorax about as long as wide, or never more than slightly abbreviated.....7

7—Elytral apices narrowly and deeply sinuate, the sutural tooth larger than the lateral, which is sharply marked but not prolonged. Body elongate, more depressed than usual, deep black; antennæ (♂) evidently longer than the body; prothorax slightly wider than long, a little narrower at base than at apex, deep and subopaque black, paler only along the apical and basal beads, finely, densely sculptured, without smooth median area, the tubercles large and strong, their summits smooth and shining, the lateral prominences strong, acutely spiniform at their summits; elytra only a little wider than the prothorax across the spines, parallel, nearly twice as long as wide, rather closely pubescent, the vestiture black on the dark areas, yellowish-white on the paler areas, the punctures moderate in size, well separated, closer suturally and especially dense in the uniform black basal area, seriate externally between the feebly tumid lines, the flanks with unusually few punctures and only near the lower part; pale dense vestiture forming a very dense and unusually large, exceptionally well defined area, in the form of a wide entire chevron, the two posterior subsutural lobes of which nearly attain the middle of the length, the anterior concave part more broken; posterior pale and black confused maculation confined to but little more than apical fourth; femora unusually strongly clavate. Length (♂) 6.5 mm.; width 2.0 mm. Colorado.....**emarginatus** n. sp.

Elytral apices truncate, with sharply marked or more or less posteriorly prominent outer angle. Body smaller, piceous-black to black and more convex; pale elytral maculation occupying most of the surface, the vacant black latero-medial area somewhat variable in extent, the erect black hairs numerous and well developed; prothorax slightly shorter than wide, the base barely perceptibly narrower than the apex in either sex, the lateral prominences very acute, sometimes with

a minute spicule; surface with the plications medially rather coarse and shining, rarely having a smooth polished feeble callus, the tubercles large but not much elevated, shining at summit, a little stronger in the male; elytra four-fifths longer than wide, very coarsely and notably closely, to less coarsely and more sparsely, punctate, always more serially toward the sides, the raised lines very feeble or obsolete; ante-median yellowish-cinereous chevron moderately wide, disintegrating somewhat near the suture, the posterior region of confused tawny and black maculation having very little cinereous intermingled. Length (♂♀) 4.6–5.7 mm.; width 1.4–2.0 mm. New Jersey and New York (Lake Champlain), westward to Indiana, Wisconsin (Bayfield) and Colorado.....**mixtus** Hald.

8—Form oblong-elongate, only feebly convex, more shining than usual; head well developed, the black basal joint of the antennæ unusually bright red at base; prothorax as long as wide, much larger and with base and apex subequal (♀), the base much narrower than the apex (♂), the lateral prominences very strong and spiniform, the tubercles strong, with rather narrow polished summit, the intermediate depression dull, finely, densely plicato-rugulose; elytra twice as long as wide (♀), distinctly shorter (♂), much wider than the prothorax and with rather prominently rounded humeri, the dense yellowish fascia broad, very oblique, narrowing much at the suture and only just visibly before the middle of the length, somewhat as in *emarginatus*, having a short internal ramus at basal fourth or fifth, which tends to cross the suture as in that species, the posterior yellow maculation confined to about apical fourth; punctures deep, rather coarse posteriorly, less coarse and much closer basally, forming approximate but not very regular geminate series externally in the concave intervals; each elytron with three progressively elevated lines, the inner feeble, the outer very strong, acute along the summit and cariniform; apices feebly sinuato-truncate, the sutural angle prominent posteriorly and obtusely dentiform, the outer angle extremely obtuse and barely evident though not rounded. Length (♂♀) 5.9–7.5 mm.; width 1.9–2.4 mm. Montana..**fastigiatus** n. sp.

Form nearly as in the preceding, black, the prothorax and elytra clothed with black-brown pubescence, intermixed, especially at the sides and apex of the elytra, with gray, each elytron having laterally, before the middle, a large white spot; thoracic tubercles distinct; elytra coarsely, irregularly punctate, only the two lateral intervals elevated, the surface between the inner and the suture having a series of four condensed tufts of black hairs, the apices truncate. Length 6 mm. Alaska.....**alaskanus** Schf.

Form and size apparently somewhat as in *fastigiatus*, nigro-piceous, with variegated white pubescence and sparsely nigro-pilose; elytra toward the suture confusedly, externally seriately, punctate, with a larger oblique white area before the middle; apex rounded, not at all truncate, the suture rather prominent, the external ridges scarcely to be traced. Length 6 mm. Kansas.....**simplex** Lec.

The species described above under the name *fastigiatus*, I should

have been disposed to identify as *simplex* Lec., were it not that the author distinctly states that the discal ridges of the elytra "are scarcely to be traced"; in *fastigiatus* the prominence of these ridges, especially the external of the three, which is very high and subacutely cariniform in both sexes, completely prohibits any close association with *simplex*, although it evidently belongs to the same group, having the external angle at the elytral apices very obtuse; in *fastigiatus* this angle is evident at the outer end of the truncature; in *simplex* it may have become so very feeble as to escape the attention of the describer. *Alaskanus*, though apparently similar to *fastigiatus*, has a series of fasciculate tufts, not traceable in that species. The original *penicillatus* was obtained by LeConte on Pic Island, near the northern shore of Lake Superior, and I am not perfectly sure that the representative from Maine, described above under that name, is really conspecific; similar examples, however, serve that rôle in all present day collections. Some specimens of *mixtus*, from New Jersey and Pennsylvania, have obviously coarser, denser and more confused punctures, more wide-spread pale maculation on the elytra and less prominent external apical angles, than others, but I find the darker, more apically angulate and more linearly and less densely punctate forms are not confined to any particular locality. The size of *arizonicus*, as given by Schaeffer, is probably a misprint.

Tribe DESMIPHORINI.

Desmiphora Serv.

This is a moderately large genus in the warmer parts of North and South America. The species have remarkably lineate and tufted vestiture, giving them a very peculiar appearance. The following species is possibly not the same as that identified by LeConte as *mexicanus* Thoms., at any rate it is not that species, being very much smaller in size among other differences. More recently Mr. Schaeffer (Bull. Bk. Inst., I, p. 328) names in his Brownsville list what is evidently the same species as the one here described, *hirticollis* Oliv., but makes no further remark concerning it. As *hirticollis* is a Brazilian species, the probabilities of its being identical are remote:

Desmiphora intricata n. sp.—Subcylindric, piceous-black, very densely clothed with brown prostrate hairs, sprinkled with a few cinereous in color; head flat between the antennæ, the latter (♀) four-fifths as long as the body, compact, very densely, coarsely pubescent and with long flying hairs in addition, the pubescence brown, sprinkled with cinereous, the latter color alone at the bases of the joints; scape only twice as long as wide; prothorax as long as wide; base and apex equal, the latter the more arcuate, the lateral spines strong, rather abruptly formed at the middle; surface convex, coarsely, rather sparsely punctate, with two nearly straight parallel-sided oblique white vittæ from the base at the sides, nearly to the apex more medially, where each is sinuate within; also with an elongate flat polished glabrous central spot and an eye-like blackish-pubescent spot, margined with white, at each side anteriorly; also, at the middle of the apex, a large tuft of long erect white hairs, extending and diminishing posteriorly, ending at the central glabrous spot; elytra a little wider than the prothorax, twice as long as wide, rounded at the apices, having a discal carina at inner third, just outside of which and at apical fourth, there is an elongate rough glabrous tumor surrounded by long erect fulvous hairs and joined with the suture and external margin by a very fine line of short white hairs, which bears a small fascicle of long white hairs near the suture and another at outer third, where there is a strong arcuation of the line; also with two small discal fascicles of stout brown hairs near the base; region near the scutellum flattened, coarsely punctate, subglabrous and bounded behind by fine oblique lines meeting on the suture before basal third, where each bears a small fascicle of long white hairs; under surface with an eye-like white-margined spot at each side of each abdominal segment; legs densely pubescent and with long hairs; fifth ventral (♀) elongate, strongly rounded at tip; last dorsal appearing behind the elytra, rounded, densely nigro-pubescent, with a central spot of white. Length (♀) 10.0 mm.; width 3.5 mm. Texas (Brownsville).

It is difficult to convey any useful idea of this beetle without a good deal of verbiage; the above description will probably enable one to compare it with other described Mexican species.

Tribe ONCIDERINI.

Lochmæocles Bates.

It seems to the writer that the difference in habitus between this subgenus, erected by Bates to receive certain large and heavily built species, in which the male antennal tubercles are produced in slender spiniform processes, and the smaller, much more slender species, without cephalic modification in the male, constituting *Oncideres* proper, are sufficient to give *Lochmæocles* full generic value. In addition to these differential features, it should be stated

that the legs are longer and the tarsi relatively shorter than in *Oncideres*. Mr. Schæffer has lately (Can. Ent., 1906, p. 18) identified certain examples of this genus, taken by Prof. Snow in southern Arizona, as *tessellatus* Thoms., but, with a male of that species from Honduras before me, I am able to state that this identification is not exactly correct, although it is an allied species. The true *tessellatus* is much smaller:

Lochmæocles marmoratus n. sp.—Body stout, deep black, with pale cinereous-white vestiture, uniform and concealing the surface on the head and prothorax, though often in great part fulvous at the sides; on the elytra it is disposed in dense and uniformly distributed small spots, which are irregularly pale fulvous, except about their peripheries, not concealing the punctures or tubercles but forming in the interspaces smaller white spots, sometimes united in slightly vermiculiform lines, and with a large unevenly condensed oblique white area at the side of each medially; anterior parts impunctate where denuded, the prothorax fully twice as wide as long, transversely truncate at apex, feebly bisinuate at base, with a strong angular lateral prominence at basal third; surface coarsely, transversely plicate; elytra three-fourths longer than wide, feebly cuneiform (♂), broader and almost parallel (♀), together broadly rounded at apex; punctures fine and sparse, becoming rather abruptly coarser in about basal two-fifths and, in about basal fourth, coarser still, closer and strongly lucido-granose, these granules abruptly wanting however on the basal slope, the humeri obliquely truncate, with a prominent tubercle at the posterior limit of the truncature; legs thick, the femora moderately clavate, uniformly densely cinereo-pubescent, sometimes partially fulvescent, the under surface also very densely and uniformly cinereo-pubescent, excepting the met-episterna and one or two small sternal spots of pale fulvous. Length (♂ ♀) 24.0–28.0 mm.; width 9.0–10.8 mm. Arizona (San Bernardino Ranch, Cochise Co.),—F. H. Snow. Four examples.

This species differs from *tessellatus* in having the flat frontal surface rather sparsely pubescent, with a fine fulvous line at each side along the eyes, in having longer antennæ, almost three-fourths longer than the body in the male, becoming gradually blacker basally through feebleness of the pubescence, the scape stouter and nearly glabrous, in having the spiculiform porrect processes of the antennal tubercles nearly parallel, in having the elytral punctures very much sparser, the ferruginous spots paler and more margined with white and the lateral white area not limited behind by a slightly darker region. In *tessellatus* the front is very densely clothed, the tubercular processes short and strongly oblique inwardly, the antennæ densely clothed to the base and the elytra with a feeble

darker cloud adjoining and intensifying the hind margin of the large lateral white spot; otherwise there is a rather close resemblance, except that *tessellatus* is decidedly smaller, about 20 mm. in length.

Oncideres Serv.

The described and undescribed species of this genus, which are represented in my cabinet, and apparently including all the known forms, excepting *pustulatus* Lec., which is exceedingly rare in collections, may be identified very readily by the following characters:

Pronotum with three shining tubercles in transverse line medially. Body rather narrow, elongate, cylindric, black, strongly shining where denuded, clothed with short cinereous vestiture which, on the elytra, forms feeble maculations but condensed in a transverse fascia occupying much less than a third the total length, from near basal third to slightly behind the middle, and numerous small spots of ferruginous color, only feebly subserial in arrangement; antennæ (♂) one-half longer than the body; prothorax narrowed at base, with a rather strong spiniform tooth laterally at basal third, somewhat strongly but sparsely punctate, the vestiture not dense, coarse; elytra parallel, together rounded at tip, strongly, not very closely punctate, the punctures becoming closer, coarser and evidently though not strongly graniferous basally; antennæ slender, pale, becoming black basally, the scape with sparse decumbent ashy hairs and with the usual fringe of longer hairs beneath. Length 12.5–14.0 mm.; width 3.8–4.8 mm. Texas (El Paso) and Arizona (Cochise Co.). **trinodatus** n. sp.

Pronotum without three denuded tubercles.....2

2—Prothorax with a moderate but acute denticle at each side near basal third, much narrower at base than at apex; elytral punctures at base not or scarcely at all graniferous; species of the southwestern faunal regions.....3

Prothorax not or moderately narrowed at base and never with more than a slight vestige of lateral spines or prominences; species of the Atlantic faunal region.....5

3—Body very slender, cylindric, the entire elytra densely clothed with cinereous pubescence, becoming abruptly bright ferruginous in clusters separated by sparser umber-brown hairs in basal sixth laterally and thence arcuately oblique to the scutellum, and with a rounded brown lateral spot at three-fifths, the small spots of denser pubescence white, except a few posteriorly, which are ferruginous. Length (♂ ♀) 11.5–13.0 mm.; width 3.4–4.2 mm. Arizona (Cochise Co.).....**quercus** Skin.

Body stouter, the denser cinereous pubescence of the elytra confined to a broad fascia, the small spots pale yellowish and not becoming paler in the cinereous band.....4

4—Punctures toward the elytral base notably coarse and close-set; impression of the fifth ventral of the female very feeble and not closely approaching the base; body larger, stouter; head somewhat swollen; antennæ (♀) with the third joint much longer than the fourth; prothorax very densely cinereo-pubescent; elytral cinereous band forming a dense zone from basal sixth to three-fifths, where it is abruptly limited except near the suture. Length (♂♀) 14.0–15.0 mm.; width 4.4–5.0 mm. Texas and Colorado. . . **texanus** Horn

Punctures toward the elytral base small and sparse, but little larger or stronger than posteriorly; impression of the fifth segment (♀) deeper, sharply angulate anteriorly and virtually attaining the base of the segment; body black, much smaller, not so stout; antennæ (♀) very slender, black, but slightly longer than the body, the third joint only very little longer than the fourth; prothorax one-half wider than long, with a rounded swollen glabrous central spot, not visible in *texanus*, and outside of which over the disk there are some sparse and moderate punctures, the pubescence not dense; elytra two and two-fifths times as long as wide, parallel, together rounded at tip, with small but deep and rather sparse punctures, the cinereous band as in *texanus* but much more nubilous, the hairs not dense enough to obscure the punctures; abdomen rufescent about the entire periphery except at base; legs extremely short, the hind tarsi nearly one-half longer than the tibiæ, being even relatively longer than in *texanus*. Length (♀) 10.8 mm.; width 3.2 mm. Texas (Brownsville) . . . . . **subtropicus** n. sp.

5—Depression of the fifth ventral segment (♀) deep and sharply marked, broadly obtuse anteriorly and occupying only about apical half of the segment; color piceous, clothed not very densely with cinereous pubescence forming a broad fascia on the elytra from about basal fourth to three-fifths and not at all sharply marked anteriorly, also having throughout the surface small sparse spots of ferruginous; antennæ pale, the scape blackish basally; prothorax (♀) fully three-fourths wider than long, only a little narrower at base than apex, sparsely and strongly punctured, with a very small flat central glabrous spot, the pubescence only moderately dense, coarse, variegated slightly with pale fulvous; elytra with strong and impressed, moderately close-set punctures, which at base become strongly, densely tuberculiferous, especially toward the humeri. Length (♀) 14.0–15.5 mm.; width 4.5–5.0 mm. Pennsylvania. . . . . **cingulatus** Say

A—Nearly as in the preceding but very pale in color, smaller in size and with the prothorax as wide at base as at apex and only about a fourth wider than long; elytral punctures less coarse and, toward base, coarsely and closely rugose only at and behind the humeri, immediately within which area they are simple, though coarse and sparse nearly to the base thence to the suture, feebly graniferous. Length (♂) 11.8 mm.; width 3.7 mm. New York.

pallescens n. subsp.

Depression of the fifth ventral (♀) acutely angulate anteriorly and about attaining the base of the segment; body rather shorter and

more obese than in *cingulatus*, the coloration similar; prothorax much narrower at base than at apex, short, two-thirds (♀) to three-fifths (♂) wider than long, less narrowed basally in the latter sex, less strongly punctured and more densely pubescent than in the preceding; elytra less strongly punctured than in *cingulatus*, the punctures basally coarser and closer but not at all graniferous except near the humeri, which are subinflated in the male, the vestiture and small ferruginous spots nearly similar, except that the cinereous hairs of the band continue to the base, the band not being at all defined anteriorly and much more feebly so posteriorly than in *cingulatus*. Length (♂♀) 15.2–15.5 mm.; width 4.7–5.0 mm. North Carolina (Southern Pines),—Manee..... **præcidens** n. sp.

As in many other parts of the Cerambycidæ, such for instance as *Pogonocherus*, *Pilema* and others, the female has more radical and diversified sexual abdominal characters than the male and is more useful in taxonomy. *Trinodatus* of the above table is identified in our lists as *putator* Thoms., but it is not that species, as shown by its much smaller size and by the color of the elytral spots, which are whitish in *putator;* the latter species belongs exclusively to the tropical fauna of southern Mexico and Central America.* *Texanus* Horn is a species so distinct from *cingulatus*, that it is rather surprising any suggestion of identity should have been made; *subtropicus* is probably the Brownsville form, placed by Mr. Schaeffer in his list as *texanus* Horn; it is however amply distinct in vestiture, sculpture, sexual characters and size.

It is remarkable that no reference seems to have been made to the very abbreviated legs in *Oncideres*, the extremely short hind tibiæ being very much more abbreviated than the tarsi.

Tribe HIPPOPSINI.

Spalacopsis Newm.

This is one of the most singular of the Lamiid types in its extremely slender body, with the elytra generally longer than the abdomen and in the long retracted front, with very prominent porrect vertex bearing the antennæ and small entire rounded eyes; it is the most highly specialized of the tribe. The species are evidently numerous in southern Florida and in Cuba; those in my cabinet—to which I have added *suturalis* by quotation from the original description—being definable as follows:

* Bates—Biol. Cent.-Amer. Col., V, p. 367.

Elytra with straight parallel sides; antennæ longer, with numerous long flying hairs beneath. (Subgen. **Euthuorus** Duval).....2

Elytra inflated posteriorly; antennæ not so long and with sparser flying hairs beneath. (**Spalacopsis** in sp.).....3

2—Linear, parallel, more feebly convex above, piceo-rufous, covered extremely densely with a crust of cinereous pubescence concealing all sculpture, except on certain parts of the elytra; antennæ in both sexes slightly longer than the body, very little longer in the male than in the female, the scape extending to the base of the prothorax and clothed with rather long brownish pubescence, which is so loose above as to fully expose the integument, prothorax one-half longer than wide, with a very broad medial and fine lateral indistinct vitta of white, the lateral along the summit of a feeble ridge; having also, at the centre of the disk, a deep foveiform puncture; elytra a fifth wider than the prothorax, parallel, oblique near the apices—very feebly (♂), more strongly (♀), the apices obliquely arcuately truncate from the external angles anteriorly to the suture and much broader in the male; surface with one sutural and two discal costules, the intervals between which have the vestiture alternately densely white and subdenuded, showing the sculpture, which is in geminate series of rather strong and very close-set punctures; outside the costules the convex surface descends more rapidly and is rather densely pale brunneo-pubescent, partially concealing the rows of punctures; apices concave. Length (♂ ♀) 10.0–10.5 mm.; width 1.2–1.3 mm. Florida (Biscayne Bay),—Schwarz.

costulata n. sp.

Linear but larger and stouter, similar to the preceding, except that the vestiture is paler cinereous and more uniformly dense, the scape longer and very densely clothed throughout, everywhere concealing the integument, the prothorax less cylindrical, more narrowed at apex and not quite one-half longer than wide, the central puncture similar but with the vittæ subobsolete, the disk transversely between the upper of the lateral ridges perfectly flat, not feebly concave along the middle as it is in *costulata;* elytra similar but flatter above and with the ridges finer and almost obsolete, the alternating densely pubescent and subglabrous areas—the latter relatively much shorter —less distinct, the apices nearly similar; apical abdominal segments (♂) diminishing much more rapidly than in the preceding, the fifth smaller, much less transverse and not extending so nearly to the elytral apices, the two black discal points on each segment less evident than in *costulata.* Length (♂) 12.8 mm.; width 1.65 mm. Florida (Palm Beach).....**scapalis** n. sp.

3—Form extremely slender; pubescence cinereous, the elytra variegated; head behind the antennæ shorter than the prothorax, with sparse non-lineate vestiture; prothorax shorter in proportion to the width than in the other species, piceous, with sparse non-lineate vestiture; scutellum minute, white, triangular; elytra nearly as in *suffusa,* the suture obscure white, the adjacent two rows of punctures brown from denudation, the third row with short white lines; there are also

many scattering spots brown from denudation; apices conjointly emarginate. Length 5 mm. Florida (Punta Gorda).
suturalis Ham.

Form more or less slender, but with the head behind the antennæ always as long as the prothorax and generally longer.....4

4—Elytra not evidently variegated, the close-set rows of punctures uniform and very distinct throughout; head and prothorax very densely cinereo-pubescent and obsoletely trilineate with paler tint, the antennæ (♂) slender, not as long as the body, with numerous very long flying hairs beneath, the scape two-fifths longer than the head and clothed not very densely with extremely short coarse hairs; prothorax equal in width to the head and slightly shorter, evenly cylindric, two-fifths longer than wide; elytra at base as wide as the prothorax, behind the middle nearly one-half wider, very evenly convex, without trace of ridges except laterally toward base, the punctures strong, very close in the even series, the pubescence of the intervals not very dense, very short, fusco-cinereous and but vaguely variegated by slight interruptions; abdomen with the short hairs unusually sparse, not concealing the rather strong sparse punctures; male with the fifth ventral short and transverse, broadly sinuato-truncate, the sides of the elytra posteriorly evenly arcuate to the acute apices, which are separated by a very small angular emargination. Length (♂) 6.0 mm.; width 0.75 mm. Florida (Lake Ashby),—Schwarz.....**suffusa** Newm.

Elytra variegated, with less distinct series of punctures and denser vestiture.....5

5—Antennæ with numerous very long flying hairs beneath; vertex before the eyes nearly as long as wide, with feebly converging sides; body moderately slender, evenly convex, obscure testaceous, the anterior parts clothed with a very dense cinereous crust; antennal scape extending to the middle of the prothorax, which is cylindric, two-fifths longer than wide, with a short central groove, the flanks with a whiter vitta and an impression near the apical and basal margins; scutellum white, equilatero-triangular; elytra at two-thirds from the base fully two-fifths wider than at the latter, the sides rounding broadly to the external apical angles, which are rather acute, the apices thence anteriorly and subrectilinearly oblique to the suture; surface with uneven geminate series of rather coarse and close-set punctures, which are partially visible through the dense pale brown vestiture, which is in great part sparse near the suture and, at about inner third, in the form of a whiter and irregularly much interrupted vitta; apices feebly concave. Length (♂) 9.6 mm.; width 1.25 mm. Texas.....**texana** Csy.

Antennæ with but few and much shorter flying hairs, the vertex before the eyes parallel and fully as long as wide.....6

6—Form moderately slender, convex and piceo-rufous, the moderately thick crust of pale brown vestiture on the anterior parts when removed revealing deep punctures, close-set on the head and less coarse and sparser on the prothorax; antennæ thicker than usual, subglabrous, not quite as long as the body (♂), the scape densely

brunneo-pubescent and extending nearly to basal third of the prothorax, the latter two-fifths longer than wide, with the sides oblique before the middle, the apex four-fifths as wide as the base; surface evenly convex, feebly so medially, the flanks even and with two white lines, the lower having a minute tubercle near the base; scutellum white, equilatero-triangular; elytra only feebly inflated behind, at two-thirds from the base barely a fourth wider, the sides thence very gradually arcuato-convergent to the rather narrow apex, which is angularly emarginate, the lobes obtusely rounded, with the dorsal impression very elongate; surface evenly convex, with very irregular clustered brownish vestiture, at many points showing the irregular geminate series of moderate punctures and with a white double vitta near inner third, much and very irregularly interrupted almost as in *texana*, forming two parallel successions of short white lines; abdomen coming very far from attaining the elytral tips, with the fifth segment in the example at hand small, scarcely more than half as long as the fourth and broadly sinuate at tip. Length (♂) 9.6 mm.; width 1.2 mm. Florida (east coast)..... **stolata** Newm.

Form very much more slender but evidently less slender than *suturalis*, the size much smaller than in *stolata;* vestiture nearly similar, the cephalic punctures where visible much smaller and sparser than in *stolata* as above identified; vertex before the eyes somewhat longer than wide; antennæ much more slender, not quite as long as the body, the scape nearly similar; prothorax narrower, only very feebly narrowed at apex, two-fifths longer than wide and with a broad shallow median sulcus not attaining base or apex, the flanks with a white line, below which the vestiture is much confused; scutellum white, smaller and narrower, slightly elongate; elytra more inflated posteriorly, at two-thirds from the base fully two-fifths wider, the sides thence very evenly and gradually arcuate and converging to the very small, broadly rounded tips, which are separated by a very minute angular emargination, the dorsal impression longer than wide but small in size; surface with confused brownish and white, moderately dense vestiture, sparser near the suture, where the close series of strong punctures are in great part exposed, the white and denser vestiture more abundant and longitudinal basally and laterally but, behind the middle near inner third, forming short and widely separated lines; fifth ventral in the type small, half as long as the fourth, transverse, sinuate medially at tip, the latter more narrowed than in the above assumed representative of *stolata*. Length 6.7 mm.; width 0.7 mm. Florida (Palm Beach)..... **pertenuis** n. sp.

The identification of sex in *Spalacopsis* proper is much less certain than in the subgenus *Euthuorus*, and I am not sure that the above determinations are always correct. My representative of *stolata* was taken possibly near Palm Beach and I have endeavored to prove that *pertenuis* is the male of it, but without success, as they are so remarkably different in the type of modification at the elytral

apices, in the stoutness of the antennæ and relative form and size of the body, in directions not suggested by the above noted male and female of *costulata*. This latter species is possibly the one identified as the Cuban *filum* by Hamilton, but having Chevrolat's description of that species at hand, I am unable to find many points of similarity; the elytral apices, for example, are said to be produced and obliquely truncate; they are rather prominent but not produced in *costulata* and *scapalis*, and the inner edge is thence very oblique and rounded anteriorly to the suture.* Both *costulata* and *scapalis* are allied much more closely to *grandis* Chev., but neither seems to be identical.

Tribe PHYTŒCIINI.

Saperda Fabr.

A very good account of our species, especially with reference to injuries to vegetation, was given by Mr. E. P. Felt (Bull. Univ. State of New York, June 1904) and all the species are there figured. There remains but little to do therefore in this genus, except to define a few forms, bearing deceptive resemblances to others, that were overlooked in Mr. Felt's revision. This particularly concerns the *tridentata* group, where my series may be resolved into two species, *tridentata* Oliv. and *imitans* Joutel and the following subspecies:

* I have recently had an opportunity to compare the male of *costulata* directly with the same sex of the Cuban *filum*, as represented by a good series in the National Museum, collected by Mr. Schwarz. Chevrolat describes the thoracic punctures of *filum*, and it was difficult to understand how this could be done if covered by so dense a crust of vestiture as in *costulata*. The comparison explains this very well, as the vestiture in *filum* does not form quite so dense a crust, and the punctures are therefore visible to some extent. *Filum* differs from *costulata* in its more slender form, shorter and very much more slender antennæ, with shorter, more slender and even less pubescent scape, less costulate elytra and transversely truncate and not sinuate apex of the fifth male ventral; the elytral apices are of nearly the same form, but the dorsal concavity of the tips, so conspicuous in *costulata*, is almost obsolete in *filum;* in fact the two are abundantly distinct species. There are large specimens included in the museum series, which appear to be *grandis* Chev., but I have not identified them carefully; *scapalis* is also allied to *grandis* but is not the same, according to the description.

In the museum collection the type series of four examples of *suturalis* Ham., show that it is different from any species at present in my collection, these differences being expressed satisfactorily in the table.

Saperda tridentata ssp. **trifasciata** nov.—Similar to *tridentata* but rather more elongate, similarly ornamented with orange lines, the distance between the middle oblique fascia and the anterior usually much greater than that between the former and the posterior fascia; minute cinereous vestiture coarser and denser, frequently concealing the punctures; legs testaceous almost throughout, the tarsi black, the cinereous vestiture not so dense as in *tridentata;* antennæ fusco-testaceous. Length (♂♀) 8.8–14.0 mm.; width 2.4 –4.3 mm. Indiana. Fourteen examples.

The testaceous legs and partially rufescent under surface will readily distinguish this subspecies from *tridentata*, where the legs, under surface and antennæ are deep black, the abdomen rufescent laterally. In addition, the three elytral fasciæ in *tridentata* are subequally spaced longitudinally. The antennal scape is longer and paler than in *tridentata* and is less abruptly narrowed at base. The name *dubiosa* Hald., applies to certain small semi-denuded males of *tridentata*, as shown by the black antennæ; this latter character will distinguish it at once from the subspecies *trifasciata*.

The following is allied to *concolor* Lec.:

Saperda mecasoides n. sp.—Form, coloration and vestiture nearly as in *concolor*, but rather more slender and with shorter prothorax, on which the lateral whiter vitta is scarcely traceable; the antennæ (♀) are shorter, not quite three-fourths as long as the body, the outer joints much shorter than in *concolor* (♀), the tenth scarcely three times as long as wide; erect hairs at the sides of the prothorax very short, scarcely evident. Length (♀) 10.0 mm.; width 2.8 mm. New York (near the city).

Differs from *concolor* principally in the shorter antennæ and virtual absence of long erect bristling hairs at the sides of the prothorax, these being replaced by shorter hairs; the hairs along the under surface of the antennæ are extremely few in number. It is probable that the food habits of these two forms are different.

Saperda vestita Say, is subject to a certain amount of local variation. The Canadian representatives, for example, are usually shorter and relatively broader than those occurring from New York to Texas, and Prof. Wickham obtained a form on the southern shores of Lake Superior, which is relatively more slender and with more fuscous cinereous vestiture. From Illinois, I have a single male having the entire antennæ testaceous. These differences are recognizable in series but are too slight for record in nomenclature.

Lateralis Fabr. is usually very uniform in ornamentation, but in one example of my series there is an isolated oblique medial dash of orange on each elytron.

Mecas Lec.

The species of this genus are somewhat intermediate in appearance between *Saperda* and *Oberea* and are moderately numerous. The species described by Say under the name *Saperda inornata*, from the Missouri River regions, cannot be identified, the annulate antennæ and subacute elytral apices preventing any legitimate identification with *saturnina* Lec., where the antennæ are not annulate and the elytral tips broadly and evenly rounded, just as in *pergrata*. *Senescens* Bates, may be identical with the Mexican *Saperda cinerea* of Newman; of this I have no means of judging, but that it is the same as *inornata* Say is altogether improbable. Hamilton states, on other authority, that the *Saperda cana* of Newman, described from Florida, is the same as *saturnina*, but I am disposed to doubt this determination very strongly and therefore do not adopt it. It is rather to be supposed that *cana* does not extend from the warm moist climate of Florida to the semi-arid regions of Kansas; this would be highly improbable on general reasoning alone. The species represented in my cabinet, which include all but *cana*—if this be really a *Mecas*—and *femoralis* Hald., may be distinguished as follows:*

Tarsal claws not cleft, but with a small oblique acute tooth just beyond the middle.....2

Tarsal claws deeply cleft.....4

2—Body black, clothed densely above, beneath, on the legs and on the under surface of the subbasal antennal joints with short and uniformly cinereous-gray hairs, the erect hairs numerous and also grayish-white; front evenly convex, the lower lobe of the eyes very broadly rounded beneath; antennæ (♀) not quite as long as the body, black, clothed sparsely, except as stated, with very short and not at all dense fuscous hairs, the joints without trace of annulation, the fringe sparse; prothorax slightly transverse, widest and with the sides feebly swollen at basal two-fifths, thence a little more narrowed to the apex, which is not quite as wide as the base; surface evenly convex, rather sparsely, moderately and subevenly punctate, without trace of callous or glabrous spots; scutellum clothed like the elytra, the latter nearly two and one-half times as long as wide, parallel, only slightly wider than the prothorax, the apices very broadly and obtusely angulate; surface even, the punctures rather small and sparse; fifth ventral (♀) a third longer than the fourth, broadly sinuato-truncate, the discal stria fine, entire; last dorsal

* I have very recently received an example of *femoralis*, collected by Mr. Manee at Southern Pines, North Carolina; it is smaller than any other species and very distinct by reason of the less dense and very even vestiture and red femora.

feebly tumid and very obtusely angulate, densely cinereo-pubescent. Length (♀) 8.5–9.2 mm.; width 2.4–2.6 mm. Texas (Harris Co.,—R. Oertel, and Austin,—Csy.) ..... **cineracea** n. sp.

Body above less densely clothed with finer, shorter, more fusco-cinereous pubescence, the sutural margins densely pale cinereous or yellow . . 3

3—Prothorax even in convexity and surface, with small sparse punctures and trivittate with dense yellowish pubescence, having no trace of callous spots; antennæ slender, blackish, very evenly and inconspicuously clothed throughout with small fuscous hairs, the fringe coarse, moderate in length and sparseness; elytra coarsely and rather closely punctate, the punctures only a little smaller near the apices, which are evenly and broadly rounded; epipleura densely yellow-cinereous. Length (♀) 7.2–8.3 mm.; width 1.7–2.0 mm. Texas and New Mexico..... **marginella** Lec.

Prothorax more evidently transverse, not vittate but with five small shining callous spots; antennæ much thicker, the joints annulate with cinereous in nearly their basal halves above, entirely cinereous beneath; elytra sparsely, rather strongly punctate, much more finely toward the apices, which are evenly rounded, black, with fine yellowish-cinereous internal and external margins, the surface medially pallescent in the female, except laterally and basally. Length (♂ ♀) 9.2–11.0 mm.; width 2.5–3.0 mm. Kansas and New Mexico. **pergrata** Say

4—Body black, stouter, densely clothed throughout with uniform cinereous pubescence, the pronotum with two very small callous glabrous spots; elytra broadly and evenly rounded at the apices..... 5

Body narrower, unequally clothed, black, the head and prothorax in great part testaceous; elytral apices sharply angulate, being obliquely sinuato-truncate thence to the suture..... 6

5—Form subcylindric, very densely clothed with luteo-cinereous vestiture, the erect hairs rather short, numerous but cinereous; head fully as wide as any part of the prothorax, convex; antennæ (♀) a little shorter than the body, not annulate, clothed throughout beneath with pale ashy, and in great part above with dark brown, hairs, the fringe distinct; prothorax subcylindric, with but very feebly arcuate sides, almost as long as wide; elytra distinctly wider than the prothorax, parallel, abruptly and broadly rounding behind, the punctures nearly concealed but moderate in size and sparse; fifth ventral (♀) feebly impressed and deflexed apically, the medial stria fine and not distinct much beyond the middle, the pygidium feebly, evenly and broadly convex, densely cinereous, the apex very feebly and broadly angulate. Length (♀) 13.5–14.0 mm.; width 3.6–3.8 mm. Kansas..... **saturnina** Lec.

Form shorter, similarly densely clothed but with paler yellowish pubescence, almost concealing the small sparse punctures, the erect hairs extremely short, scarcely discoverable on the elytra and cinereous; head not as wide as the middle of the prothorax, the antennæ distinctly shorter than the body, shorter than in the preceding species, clothed throughout beneath with cinereous pubescence and above by a mixture of cinereous and brown, the latter predominating toward

the apices of the joints but without producing a distinct annulation as it does in *pergrata;* prothorax short, rather more than one-half wider than long, the sides swollen and subprominent just behind the middle, the two glabrous spots very clearly limited and distinctly tumid; elytra parallel, wider than the prothorax, each very broadly, evenly and semicircularly rounded at apex, the finer sutural and marginal striæ distinct; abdomen densely cinereo-pubescent, the fifth segment in the type a third longer than the fourth, deeply impressed in more than apical half, the impression transversely elliptic; pygidium feebly, evenly convex, broadly arcuate at apex. Length 11.0 mm.; width 3.2 mm. Kansas. .....**brevicollis** n. sp.

6—Body very elongate, narrow, only feebly convex above, black, the head and entire prothorax pale testaceous; erect hairs short, pale, a little longer toward base of the elytra; head not swollen, strongly, the front closely, punctate; antennæ (♂) not quite as long as the body, piceous, clothed with fine dark brown pubescence, largely cinereous beneath; prothorax opaque, convex, slightly transverse, with feebly and subevenly arcuate sides, the surface with very fine, not dense cinereous pubescence, parted by three broad, more deeply fulvous and glabrous entire vittæ, the erect hairs rather long, pale; elytra slightly wider than the prothorax, three and one-half times as long as wide, coarsely, rather closely punctate, only a little less finely apically, the punctures not at all concealed by the very short fine luteo-cinereous appressed hairs, the exterior discal elevated line moderately distinct; abdomen very minutely, sparsely punctulate, minutely, not densely cinereo-pubescent and (♂) with the sides of the last three segments broadly, densely sericeo-pubescent and paler, yellowish, the fifth segment with a large and very deep oval excavation; pygidium evenly rounded at apex. Length (♂) 12.0 mm.; width 2.8 mm. Texas.....**ruficollis** Horn

Body similar but not quite so elongate, deep black, the head and prothorax partly pale, the pubescence nearly as in *ruficollis*, the erect hairs everywhere shorter, the antennæ similar, three-fourths as long as the body (♀); head only very feebly swollen, the punctures coarse, finer on the front, all well separated, the color testaceous, the sides behind the eyes broadly, and a feeble median vitta, black; prothorax opaque, a fourth wider than long, the sides broadly and feebly swollen just behind the middle, the punctures coarse and close-set laterally, sparser medially and subobsolete in the pale areas; color testaceous, with a medial and broader juxta-coxal vitta black, and, on the sides, a large black anterior and another basal, spot of black, the latter dilated inwardly obliquely along the base and obsolete at the middle, the pale vittæ with a very small elongate area of fine minute ashy pubescence, elsewhere nearly glabrous; elytra almost as in the preceding but less coarsely and, toward tip, much more finely punctate; abdomen (♀) minutely, sparsely punctulate, very minutely, inconspicuously fusco-puberulent and with numerous palish coarse erect hairs throughout, the fifth segment two-thirds longer than the fourth, feebly sinuato-truncate but not reflexed at tip, the stria deep, extending nearly to the tip, the pygidium sharply

tumido-angulate at apex. Length (♀) 12.2 mm.; width 2.8 mm. Mexico (Durango City),—Wickham.....*vitticollis n. sp.

Ruficollis is of a common Mexican type and a number of allied species have been described by Bates and others, such as *laticeps* and *mexicana* of Bates and *rotundicollis* of Thomson, but I fail to find any description very well fitting *vitticollis* as above defined. Horn did not mention the dense fulvo-sericeous vestiture toward the sides of the last three ventral segments of the male in *ruficollis*, but it is described by Bates in the Mexican species. *Vitticollis* may be among the forms confused with *ruficollis* by Horn, but I have not seen his material; it is, at any rate, widely different from that species in the punctuation of the head, in the coloration and sculpture of the prothorax, in the shorter and less numerous erect hairs of the pronotum, less coarse elytral punctures and evident inner, as well as still much stronger outer, of the raised discal lines of the elytra; these divergencies are mostly of an asexual nature.

Amillarus Thoms.

This neotropical genus is introduced merely to announce a peculiar form, which I have had undetermined in my collection for many years, having very slender antennæ and long elytral spines; it may be described as follows:

***Amillarus tenuicornis** n. sp.—Form very slender, moderately convex, black throughout, the entire legs and all the antennæ excepting the scape dull but pale testaceous, the scape deep black; pubescence above not dense and consisting of extremely minute appressed cinereo-fuscous hairs, condensed in three feeble vittæ on the prothorax, longer and denser beneath, albo-subvittate at the sides of the metasternum and along the posterior part of the met-episterna; erect hairs everywhere wanting; head as wide as the prothorax, with very convex eyes, which are unequally bilobed, finely faceted and widely separated; antennæ long and very slender, filiform, fully three-fourths longer than the body, subglabrous, sparsely fringed beneath, the scape slender, extending to the base of the prothorax, the third joint very long, half as long as the elytra and nearly a third longer than the scape, three to eight diminishing gradually in length; prothorax slightly transverse, bitruncate, slightly narrower at base than at apex, the sides feebly swollen and subprominent at the middle; surface subevenly cylindric, alutaceous, strongly but not very coarsely, loosely punctate; scutellum semicircular and having dense pale pubescence contrasting much with the blackish general surface of the elytra, the latter much wider than the prothorax, with rather angulate humeri, subparallel, the sides gradually converging and arcuate posteriorly to the very acute

spiniform angle, the apices thence anteriorly sinuate to the suture; punctures not very coarse or close, distinctly sublinear in arrangement; legs very slender, long, the femora not clavate, the basal joint of the hind tarsi longer than the next two combined; abdomen with sutures two to four deeper than the first. Length 11.0 mm.; width 2.5 mm. Isthmus of Panama (Darien).

From *apicalis* Thoms., this species differs very much in its uniform black color, more slender form, longer apical spines of the elytra and still more elongate and more slender antennæ.

Essostrutha fimbriolata Bates, is represented in my collection by four examples from Guerrero, collected by Baron; the sexual differences in coloration are very remarkable, the male being entirely yellow above, excepting the four rounded pronotal spots; in the female the size of the body is not quite so large, the pronotal spots subunited longitudinally and extending to base and apex, and the elytra are deep black in basal fourth and apical third. Another male example, from Ecuador, is smaller and shorter, ochreous-yellow, except the four pronotal spots, which however are not discal, as in the male of *fimbriolata*, but attain the apical and basal margins; it represents a distinct species.

Oberea Muls.

This holsubarctic genus contains a very large number of forms, which, because of some color variability, have caused a good deal of difference of opinion among systematists; but after studying my material attentively, the conclusion is forced upon me that the views of Dr. Horn are very conservative, while those of Dr. Hamilton can be characterized by no other term than irrational. In the following arrangement of the American species color is not made the basis of named taxonomic forms, unless accompanied by structural characters which can be recognizably described, including outline, sculpture, pubescence, special modifications of the elytral tips or in some sexual peculiarity. Six of the hitherto described forms—*oculaticollis* Say, *affinis* Harris, *tibialis*, *flavipes* and *myops* of Haldeman and *texana* Horn—are apparently missing in my material, which is moderately extensive; it may be arranged as follows:

Pronotum pale in color, with four black callous spots—disregarding the median line, which is frequently elevated medially.....2
Pronotum pale to black, with two black callous spots.....5
Pronotum without more obscurely colored callous spots.....16

2—Elytra deep black throughout, excepting a pale marginal area below the humeri, evenly and very moderately though closely punctate throughout, the raised lines very feeble, pruinose, with moderate cinereous hairs, the erect hairs extremely short; apices of the elytra rounded to very feebly obliquely subtruncate; sterna of the hind body and the greater part of the abdomen black; pygidium (♀) very convex, tumid and angularly pointed. Length (♂ ♀) 12.0–15.0 mm.; width 2.4–3.1 mm. California.....**quadricallosa** Lec.

Elytra never black.....3

3—Elytra with the inner of the two discal lines obsolete, the outer more than usually accentuated and, basally, including a broad scutellar region which is much more sparsely punctured than the remainder of the surface. Body rather broader than usual, parallel, only moderately convex, fuscous above, the under surface in great part black, the legs pale, except the black tarsi and tibial apices; head black, pale near the eyes, between the upper lobes and at base except medially; antennæ short, piceous-black basally, three-fourths as long as the body (♂); prothorax subcylindric, not quite as long as wide, the median line strongly tumid centrally; elytra pale at the sides basally, the pale area prolonged posteriorly in a narrow line along the margin almost to the apex and along the discal ridge nearly to the middle, also along the basal margin including the scutellum, the humeral callus black; punctures coarse and deep, small apically, the apices rounded; pubescence ashy but short and sparse; surface between the punctures dull in lustre, micro-rugulose; male with the last true dorsal segment as wide as long, only moderately convex and with the parallel subbasal ridges widely distant, obtuse and feeble. Length (♂) 13.6 mm.; width 3.0 mm. Pennsylvania. [Louisiana Lec.].....**schaumi** Lec.

Elytra with the inner of the two discal lines feeble but evident, the outer less prominent than in *schaumi*, the punctures basally toward the scutellum not sparser than elsewhere.....4

4—Form more slender than in *schaumi*, uniform pale brown throughout above, the head nearly as in *schaumi*, the elytra each with a small black discal spot at apex; under surface and legs nearly similar; antennæ even shorter, similar in coloration; prothorax nearly similar but with the sides slightly swollen medially and the pubescence coarser and denser; elytra very coarsely punctate (♂), or moderately but more closely (♀), the humeral callus with a minute black spot; pubescence abundant, giving a strongly pruinose effect, the apices strongly rounded to feebly subtruncate; last dorsal segment (♂) more narrowed and more rounded at apex than in *schaumi* and with the subbasal prominences obsolescent; concavity of the fifth ventral shallower and more pubescent; pygidium (♀) less convex than in *quadricallosa* and with the apex not acutely angulate but obtusely lobiform. Length (♂ ♀) 10.5–13.0 mm.; width 2.2–2.8 mm. Missouri (near St. Louis).....**pruinosa** n. sp.

Form still more slender and elongate, pale ochreo-ferruginous throughout, the head without black maculation, the black thoracic spots small, the elytra with the humeral callus alone black, the under surface

very pale like the upper, with a black area near the sides of the metasternum and on the met-episterna; tarsi and tibial tips blackish; pubescence minute, not dense, giving a very feeble pruinose effect; antennæ longer and more slender than in the two preceding, being nearly as long as the body (♂); prothorax as long as wide, cylindric, with a feeble swelling at the middle of the sides, the callous spots not large but all strong, the median line tumid, except near base and almost apical half, the punctures coarse and rather close-set; elytra with the punctures very coarse, close-set, serial, becoming confused and smaller apically as usual, the apices truncate, with broadly rounded external and minutely dentiform sutural angles; last dorsal segment (♂) longer than wide, feebly trapezoidal, with broadly rounded apex, rather convex and with the subbasal ridges strong; cavity of the fifth ventral deep but pubescent like the rest of the surface. Length (♂) 10.8–11.0 mm.; width 2.2–2.3 mm. Kansas. **ferruginea** n. sp.

5—Elytra and entire upper surface uniformly pale ochreo-testaceous throughout, the head a little darker testaceous; under surface, legs, tarsi and antennæ very pale, the sterna and subbasal parts of the abdomen sometimes infumate, the scape also a little darker in shade. Body very slender (♂), a little shorter (♀), the antennæ slender, distinctly shorter than the body in both sexes; prothorax transverse, a fourth to third wider than long, the sides feebly and medially arcuate; surface with moderate punctures, only feebly shining, the median line not tumid as it is in the preceding group, the two callous spots strong but only darker testaceous in color (♂) or black (♀), the middle of the base with a small point similarly varying in color; elytra long and slender, sinuato-truncate and bidenticulate at apex, having series of rather coarse separated punctures, not smaller but confused apically, the cinereous vestiture short, sparse and not very evident; pygidium (♀) strongly tumid and convex discally toward apex, the ridges of the last dorsal (♂) strong and subacute, the fifth ventral with a moderate subtriangular impression, which is evident also in the female though much smaller and feebler. Length (♂ ♀) 9.0–11.0 mm.; width 1.65–1.9 mm. Maine (Monmouth and Wales), C. A. Frost..... **pallida** n. sp.

Elytra pale, with dark marginal and sutural vittæ.....6

Elytra deep black throughout, less uniformly so only in *exilis*.....7

6—Form slender, rather elongate, parallel, flattened above, pale flavo-testaceous, the head normally pale, sometimes with feeble and limited blackish marking, the prothorax with three black spots, one at the middle of the base; scutellum and a lateral and sutural vitta—the latter not attaining the scutellum—on each elytron blackish, the margin pale near the humeri; legs and coxæ pale throughout in both sexes; under surface black, the abdomen (♂) with the last two segments abruptly pale, except a large discal area of the fifth, also nubilously pale at base, or (♀) wholly black, except at the sides of the fourth and often the third segment; pubescence ashy but not dense above, the erect hairs short and pale, closer but not very dense beneath; antennæ slender, about as long as the body, pale, the first

three joints black, the others abruptly black at apex; prothorax cylindric, as long as wide (♂) or slightly transverse (♀); elytra barely three times as long as the head and prothorax together, with series of coarse punctures, confused and a little smaller apically, the apices rectilinearly and somewhat obliquely truncate, the inner, but only seldom the outer, angle, minutely denticulate; pygidium (♀) broadly convex and swollen discally but only very obtusely prominent behind. Length (♂ ♀) 9.5–11.8 mm.; width 1.8–2.3 mm. New York to District of Columbia. [♂ *mandarina* Fabr., ♀ *amabilis* Hald.]..... **tripunctata** Swed.

A—Outline, coloration, sculpture and vestiture nearly similar, the body not quite so elongate and the punctures very slightly less coarse, the black spot of the fifth ventral (♂) virtually wanting, the fourth and fifth (♀) pale at the sides and apex, the pale color extending to abdominal base at the sides; head pale throughout; antennæ differing conspicuously, not deep black basally and generally scarcely darker, with the other joints infuscate; gradually pale toward their bases; pygidium (♀) more pointed behind. Length (♂ ♀) 10.0–11.5 mm.; width 2.0–2.2 mm. Indiana, Illinois and Mississippi (Vicksburg)..... **intermedia** n. subsp.

B—Outline nearly as in *intermedia:* coloration, sculpture and vestiture almost identical, except that the head is deep black, the black area sharply and abruptly limited on the occiput by a broadly and posteriorly angulate line, the angle attaining the prothorax, the black discal spots of the latter unusually small; antennæ (♀) not quite as long as the body, slender, filiform, extremely pale in color, the first two joints alone darker and blackish, the remaining joints abruptly black at their apices as in *tripunctata.* Length (♀) 10.7 mm.; width 2.1 mm. North Carolina (Asheville)..... **appalachiana** n. subsp.

Form, sculpture and vestiture nearly as in *tripunctata* but much more elongate, the coloration differing decidedly; head deep black, the black limited on the occiput by a straight (♂) or posteriorly angulate (♀), sharply marked line; prothorax nearly as in *tripunctata*, except that the basal spot is not rounded or transversely oval but in the form of a short narrow vitta; elytra (♂) four times as long as the head and prothorax combined, infuscate throughout except basally, the sutural bead and the sides, except the lower edge basally, blacker, the scutellum differing greatly in being very pale like the surrounding surface, and not black as it is in *tripunctata* and related forms; legs pale; under surface (♂) wholly pale, excepting a rounded spot just outside the anterior coxæ, all the metasternum and side-pieces excepting a large transverse anterior median area, narrow sublateral spots on the second and third and the entire fifth segment except at base, which are deep black, the black areas sharply defined, or (♀) entirely pale, except that the black of the male is more extended, forming two subapical spots on the first segment, occupying all the second and third except at the sides and the fifth except at the sides and base; pygidium (♀) but feebly protuberant medially; antennæ (♂) five-sixths, or (♀) much shorter and less than four-fifths, as

long as the body, blackish, feebly and just visibly pallescent distally, where each joint has only its extreme tip a little more blackish. Length (♂ ♀) 12.0–13.0 mm.; width 2.0 mm. New York (Bluff Point, Lake Champlain)..... **prælonga** n. sp.

7—Under surface, legs and antennæ throughout deep black except in the male of *exilis*, the elytral tips obliquely sinuato-truncate and distinctly bidenticulate as a rule.....8

Under surface and legs, except the tarsi and tibial apices, pale rufo-ferruginous, the elytral apices rounded, the sutural angle alone minutely denticulate.....15

8—Elytra (♂) pale at base at each side of the scutellum, the pale tint sometimes extending posteriorly along the median part of each in a faintly pallescent nubilous vitta. Body very small and slender, black, the antennæ deep black, the pale prothorax narrow, cylindric, with feebly arcuate sides, sometimes even a little longer than wide, the black spots large, the entire base broadly black; elytra with rows of coarse punctures but little confused apically, flattened above, feebly inflated posteriorly, the fine cinereous hairs very inconspicuous, the erect hairs short, blackish; lower margin toward base pale; entire under surface, except the prosternum before the coxæ, deep black, feebly cinereo-pubescent, the abdomen distinctly but rather sparsely punctate laterally; legs short, entirely blackish-piceous in two examples, the anterior wholly pale, the second and third pairs blackish, with the femora at base and apex and the tibiæ basally pale, in the third example. Female much larger and stouter than the male, with the punctures everywhere more crowded, the coloration more intense black above and beneath, the legs deep black and the prosternum wholly pale anteriorly. Length (♂ ♀) 8.3–10.8 mm.; width 1.4–2.0 mm. Pennsylvania (Harrisburg, Highspire and Heckton Mills),—W. S. Fisher..... **exilis** n. sp.

Elytra deep black throughout, never pale at base.....9

9—Pronotum as in *exilis*, with a parallel-sided transverse black fascia at base, often abruptly interrupted at the sides; antennæ feebly thickened distally when compared with the basal part of the third joint.....10

Pronotum with a longitudinally shorter basal fascia, frequently not attaining the sides and with its anterior margin not transverse but very broadly angulate; antennæ strictly filiform.....12

Pronotum with a rounded basal black spot adjoining the scutellum; antennæ filiform.....13

10—Head deep black. Body small and shining, strongly, clearly, deeply and moderately closely punctate; antennæ evidently shorter than the body; prothorax nearly as long as wide, coarsely, rather closely punctate; elytra distinctly inflated posteriorly and with the oblique apical truncature unusually and rather deeply sinuate, having series of close-set deep coarse quadrate punctures, the ashy hairs sparse and inconspicuous, the erect hairs numerous, blackish; strong punctures of the abdomen wholly lateral and beginning rather abruptly; legs piceous to black. Length (♂) 8.3 mm.; width 1.5 mm. District of Columbia..... **delicatula** n. sp.

Head pale to fuscous 11

11—Body smaller and notably slender; head not closely punctate, the punctures smaller and feebler than in the preceding; antennæ notably thickened distally; prothorax a little longer (♂) to shorter (♀) than wide, more sparsely and less coarsely punctate than in the preceding; elytra only very feebly inflated apically, with rows of coarse subquadrate punctures, the outer of the discal raised lines rather strong, the fusco-cinereous hairs moderately distinct, the erect hairs very evident; legs blackish or piceous; carinæ of the last dorsal segment (♂) rather approximate, strong; pygidium (♀) moderately convex, much narrower and more pubescent than in the preceding. Length (♂ ♀) 8.5–9.8 mm.; width 1.4–1.7 mm. North Carolina (Southern Pines),—Manee ..... **perspicillata** Hald.

Body broader and with the cinereous vestiture much more distinct; head strongly, rather closely punctate and with cinereous hairs; antennæ (♂) nearly as long as the body, slightly shorter (♀); prothorax more nearly similar in the sexes, as long as wide (♂) to a little shorter (♀), the sides feebly arcuate, the punctures strong, not dense; elytra four times as long as wide to a little less, distinctly inflated apically, the punctures serial, confused apically, close-set, coarse and subquadrate, the apical truncatures narrow, sinuate, strongly bidenticulate; legs black to piceous; last dorsal (♂) with the subbasal carinæ widely separated and feeble, the pygidium (♀) moderately swollen, feebly angular posteriorly. Length (♂ ♀) 9.2–9.8 mm.; width 1.7–1.9 mm. Utah (Nephi) and Idaho (Pocatello),—Wickham ..... **montana** n. sp.

12—Form extremely slender, subcylindric, moderately shining; head black, dilated, strongly, rather closely punctate, with a feeble longitudinal impression on the vertex, which is impunctate; antennæ (♂) much shorter than the body, slender, filiform, clothed with fusco-cinereous pubescence, the long hairs and fringe well developed; prothorax slender, longer than wide, evenly cylindric, much narrower than the head, moderately punctate, opaque, the erect pale hairs numerous, the basal spot triangular, half as wide as the base; elytra slender, feebly inflated apically, convex throughout the width, the raised lines subobsolete, the serial punctures coarse as usual, much confused at apex, the truncatures almost transverse, rectilinear and scarcely at all bidenticulate; abdomen very slender, cylindric, the punctures strong laterally, becoming rather coarse toward base; legs short, stout, black. Length (♂) 9.5 mm.; width 1.6 mm. Pennsylvania (Harrisburg),—W. S. Fisher ..... **filum** n. sp.

Form very slender, linear, rather shining, the pubescence sparse, fusco-cinereous and scarcely visible; head shining, convex, fuscous, the punctures deep and distinct but not very coarse or close; antennæ very slender, almost as long as the body (♀); prothorax slightly shorter than wide, a little narrower at base than at apex, the punctures rather coarse but widely separated; elytra feebly swollen apically, the serial punctures coarse, subquadrate, much confused apically, the truncatures oblique, sinuate and strongly bidenticulate;

abdomen shining, the minute sculpture feeble and not dense, the punctures strong only very near the sides; pygidium (♀) simply and moderately convex; legs piceous. Length (♀) 9.2 mm.; width 1.45 mm. North Carolina (Asheville). [Georgia—LeConte].
basalis Lec.

Form shorter and much less slender, the cinereous hairs more numerous, paler and very evident; head fuscous to paler, rather finely and sparsely punctate; antennæ truly filiform, slightly (♂) to much (♀) shorter than the body, notably ashy-pubescent distally; prothorax cylindric, with distinctly arcuate sides, a little shorter than wide (♂) to nearly a third wider than long (♀), the punctures indistinct, not coarse; elytra feebly swollen apically, more strongly (♀), the surface flattened medially, with even rows of coarse subquadrate punctures, confused apically (♂), or with all the punctures inside the feeble outer raised lines more or less confused (♀); apices obliquely and rectilinearly truncate, the outer angle not dentiform; legs piceous; abdominal punctures gradually stronger toward the sides. Length (♂♀) 7.8–9.2 mm.; width 1.3–1.85 mm. Iowa (Keokuk) and Illinois (northern).....**iowensis** n. sp.

13—Head pale like the prothorax or but little darker, the front sparsely and not very coarsely punctate; pygidium (♀) strongly convex. Body larger in size than usual in this group; antennæ filiform but not very slender, very nearly as long as the body (♂), black, fusco-pubescent; prothorax nearly as long as wide to a little shorter, the sides subprominent just behind the middle, subopaque, not very distinctly but coarsely punctate; elytra but feebly dilated apically, more distinctly and abruptly so (♀), the apical truncatures but slightly oblique and not distinctly denticulate, the punctures coarse, subquadrate, confused apically and smaller and confused near the suture, especially in the female, the ashy hairs fuscous and indistinct, the erect hairs very short; abdomen with the stronger lateral punctures smaller than in the preceding species; carinæ of the last dorsal (♂) strong and very acute; legs black to piceous. Length (♂♀) 11.2–14.8 mm.; width 2.2–2.9 mm. North Carolina (Southern Pines),—Manee.....**insignis** n. sp.

Head black; front strongly and closely punctate; pygidium (♀) much less convex.....14

14—Form slender; head black; antennæ distinctly shorter than the body in both sexes, slender, filiform, black; prothorax cylindric, nearly as long as wide, rather sparsely but strongly punctate; elytra nearly as in the preceding, the punctures irregular only very near the suture, broadly so apically, the truncatures oblique, sinuate, strongly bidenticulate; legs short, black; punctures toward the sides of the abdomen fine. Length (♂♀) 11.0–12.0 mm.; width 1.8–2.1 mm. Pennsylvania. [*tripunctata* Fabr. nec Swed.].....**bimaculata** Oliv.

Form still more slender, the ashy pubescence very distinct, the lustre subopaque; front strongly, very densely punctate and puberulent; antennæ slender, filiform, much shorter than the body, black but becoming fusco-testaceous distally and somewhat ashy-pubescent, with the joints gradually slightly paler toward their bases; prothorax

rather longer than wide (♂), with feebly arcuate sides, strongly, closely punctate: elytra very elongate, feebly swollen and only very near the apex, flattened inside the unusually prominent external discal lines, the punctures only moderately coarse, subquadrate, close-set in series, much confused posteriorly and becoming notably smaller apically, the truncatures very oblique and deeply sinuate, the outer tooth unusually acute and prolonged; legs slender, black; punctures toward the sides of the abdomen close-set and unusually strong, becoming very coarse basally; last dorsal segment (♂) with the carinæ distant and unusually feebly elevated but with finely acute summits. Length (♂) 10.3 mm.; width 1.6 mm. North Carolina (Southern Pines),—Manee.....**dolosa** n. sp.

15—Body stouter than usual, the elytra flattened above, pale ferruginous in color and sexually similar, the elytra, excepting the epipleura—faintly pale at base.—the entire antennæ, the tarsi and tibial apices, deep black; pubescence ashy, distinct on the elytra, giving a pruinose effect; head evenly convex, strongly, rather closely punctate; antennæ much shorter than the body in both sexes; prothorax swollen at the sides behind the middle, nearly as long as wide (♂) or distinctly transverse (♀), coarsely and closely punctate, without black maculation except on the two callous spots; scutellum pale, truncate; elytra slightly wider than the prothorax, feebly swollen posteriorly, having series of very coarse and moderately close-set subquadrate punctures, evidently confused and less coarse apically; pygidium (♀) only very moderately and subevenly convex; last dorsal (♂) with the carinæ moderate, somewhat converging basally; legs short but, as usual, with the hind tarsi shorter than the tibiæ. Length (♂♀) 13.5–14.0 mm.; width 2.8–3.0 mm. Texas.....**ocellata** Hald.

A—Similar to the preceding in coloration, sculpture and vestiture, except that the head and pronotum both have a large discal area black, that on the latter involving both callous spots but not attaining the flanks or base, the punctures decidedly less coarse and not so close-set; hind body not so elongate, the elytral punctures not quite so coarse and more elongate in form. Length (♂♀) 9.8–13.5 mm.; width 1.8–2.8 mm. North Carolina (Southern Pines),—Manee.....**plagiata** n. subsp.

16—Form somewhat as in *ocellata* but still larger and stouter and with the cinereous vestiture of the elytra denser, giving a strongly pruinose effect; coloration throughout as in *ocellata*, excepting that the elytral flanks and epipleura basally are more distinctly pale and the entire tibiæ, as well as the femoral apices, black; head coarsely, densely punctate; antennæ filiform, long, about as long as the body (♂) to but little shorter (♀); prothorax slightly transverse in both sexes, the sides subprominently swollen behind the middle, the punctures coarse, subconfluent, wanting in flattened tumid vacant spaces representing four callous spots; scutellum pale, transverse, truncate, densely pubescent; elytra flat above, unusually expanding toward base and dilated apically, the apices obliquely truncate but not bidenticulate; punctures impressed, relatively much less coarse and more widely separated than usual, rather fine and confused apically;

pygidium (♀) strongly convex but not protuberant posteriorly; carinæ of the last dorsal (♂) long, strong and parallel; abdomen much more finely punctured than in *ocellata*. Length (♂ ♀) 14.0–17.0 mm.; width 3.1–3.7 mm. Pennsylvania (Franklin Co.), West Virginia and North Carolina (Southern Pines). [*plumbea* Oliv.] ..... **ruficollis** Fabr.

Form shorter and relatively still broader, the disk of the elytra broadly flat or slightly concave, the color very different, pale ochreo-ferruginous throughout, the elytra each with a black vitta at the summit of the flank, the tarsi and the tibiæ except basally, black, the antennæ piceous-black basally; pubescence short, sparse and very inconspicuous; head and prothorax with strong close punctures, the latter not as long as wide (♂) to distinctly wider (♀), the parallel sides but feebly and subevenly arcuate; vestiges of the callous spots, two in number, very feeble; elytra rather short, only between three and four times as long as wide, coarsely, serially punctate, the punctures very deep, well separated and rounded, smaller and confused apically and near the suture; exterior of the raised discal lines much stronger and more nearly entire than in any other species; apices obliquely truncate, scarcely at all bidenticulate; pygidium (♀) very moderately convex, not at all protuberant. Length (♂ ♀) 10.0–12.5 mm.; width 2.0–2.7 mm. North Carolina (Southern Pines),—Manee ..... **gracilis** Fabr.

The above study has had as its object the most practical arrangement for the identification of the species; *ruficollis*, for example, is really more closely related to *quadricallosa* than to any of the intermediate forms of the table, the most evident difference being the absence of black coloration on the four thoracic callous spots of the former. In the difficult *bimaculata* group, I am unable to state just which may ultimately prove to be true species, or designate at present those that should hold a lesser rank; they cannot all be subspecies of *bimaculata*, for some of them, such as *insignis*, *dolosa* and *exilis*, have well marked distinctive structural peculiarities and *perspicillata* has less filiform antennæ; so I will leave them as announced until further light can be shed on the subject by means of carefully collected material.

The species in *Oberea* are variable in color, it is true, but they have not the almost illimitable fortuitous variability that has been ascribed to them by those who have not even taken the trouble to separate the sexes and note the purely sexual divergencies of coloration; it is this apparently erratic variability that has chiefly served to discourage nearly all investigation of the genus. I find that the variability they possess has its limits, and that these are much less

extended than supposed, the only point to be mentioned being the fact that species or subspecies, whatever may be the meaning of the latter term—in my own opinion largely without meaning in our present stage of knowledge—are, as in *Tetraopes*, very much more numerous than hitherto admitted. A genus such as these must either be an undecipherable chaos of few arbitrary composite units, or a systematic succession of a greater number of more clear-cut units, until the limits of variability become really known. I prefer the latter manner of solving the difficulty, provided there be any structural basis for the finer subdivisions.

There are even more unaccountable eccentricities of color variation in *Mecas pergrata* than in any *Oberea* that I have seen; for example, in one male before me the fifth ventral segment is wholly black, while in another male from the same locality and apparently not differing in any other way, the fifth segment is bright red, the basal black part separated by an abrupt line. In the *Oberea bimaculata* series, I find that in some species the head may be as pale as the prothorax to nearly black, but in the latter case the dark color is nubilous and not of a deep black and separated from the pale basal part by a sharp line of demarcation, as it is in some allied but apparently distinct species. The coloration of the legs, mentioned above under *exilis*, like that of *Parallelina subargentata*, is another unexplainable instance of color dimorphism—I would rather use this term than variability in such cases—for it does not seem to be sexual in origin. Of course I may have confused two different taxonomic units, which however seems inconceivable, either in this case or that of *Mecas pergrata*.

Tribe TETRAOPINI.

This tribe, as organized by Bates, seems to be sufficiently distinct from the Phytœciini by reason of the very broadly and completely divided eyes. The three genera known to me are *Tetraopes*, *Phœa* and *Tetrops*.

Tetraopes Serv.

In North America, as far to the southward as Central America, this is a large genus of peculiarly massive longicorns, frequently closely allied among themselves but at the same time exhibiting considerable diversity, especially in ornamentation and vestiture.

The short cinereous clothing is always dense beneath and on the legs, and is also generally distinct although always less dense on the upper surface and antennæ.

In the following review I have been unable to recognize *oregonensis*, *basalis* or *mancus* of LeConte. The first is nearly 14 mm. in length, has the prothorax abruptly elevated medially, the discal spots of the elytra in the usual position but very small and often wholly obsolete; it is compared with *basalis* under the original description, as also having the basal antennal joint red,—a very unimportant feature however,—and is said to differ by having the thoracic umbo abruptly elevated, indicating that it is not abruptly elevated in *basalis*, though in the original description of the latter, founded on an example from the Sierra Nevada, the sides of the prothorax are said to be "subito depresso"; but, more important still in regard to *basalis*, the fourth elytral spot, meaning probably the posterior discal spot, is said to be "placed quite at the margin," which would cause it to be an exception in the entire genus and equally an exception if the fourth spot were the post-humeral; just before the quotation given, it is said that the spots have the same position as in *femoratus!* That the spot may not be normally placed in *basalis*, however, is perhaps indicated by the care taken, under the description of *oregonensis*, to state that the spots "are in the usual position" in that species. *Mancus*, from the Tejon region of southern California, seems to have the usual coloration and to be briefly nigro-pilose, the thoracic umbo abruptly elevated, the elytra moderately punctate and with only the humeral and post-median spots, as in *quinquemaculatus*, the legs wholly black as in that species, the antennæ annulate with cinereous and the scape tinged with red. I have one example which comes very close to this diagnosis, agreeing in every way except as to the black elytral hairs and the annulated antennæ, neither of these characters being evident; it is named *omissus* below. That *mancus* should have been united with *femoratus* as a variety is not readily comprehensible; it is evidently a fully distinct species.

Basalis is not considered at present, as it seems to be an isolated type, probably peculiar to the Sierra Nevada region, though, in most collections, any specimen with a red scape is liable to be found under that name. *Oregonensis* is also omitted, as I do not have

anything answering very well to the description in the material at hand among a number of west coast forms. Both are valid species, however, and apparently not closely related to *femoratus*. The coloration of the antennal scape is one of the most variable features of the western species, and in the large and strikingly distinct *velutinus*, for example, it is virtually wholly black in one female but bright red with black apex in the other two females and single male. Similar inconsistencies are noticeable elsewhere. The posterior of the four elytral spots is the most persistent and is never obsolete. So far as known to me the species are as follows:

Elytra with a large common black chevron just before the middle, sometimes united along the suture with a still larger apical chevron, the anterior angles of which are the usual post-median, deeper and more velvety, black spots, the post-humeral spot invariably wanting..2

Elytra without extended black maculation, each having a humeral, post-humeral, anterior juxta-sutural and post-median discal spot of black, one to three of the anterior spots sometimes wholly obsolete but only in the *femoratus* group, the humeral only very rarely even there, the post-median extremely constant and never wanting, the post-humeral the most variable in form.....7

2—Humeral, post-humeral and anterior juxta-sutural spots invariably wanting, the only elytral spot being that at the anterior external limits of the posterior black chevron; body very small in size.....3

Post-humeral and anterior juxta-sutural spots alone invariably wanting.5

Post-humeral spot alone wanting, the other two discal spots transversely lineiform; pronotum without the usual four black spots.....6

3—Head black. Body black, cinereo-pubescent throughout and nigro-pilose; prothorax with the sides at the middle abruptly but not strongly prominent, marked by four very black spots, the apex and base red; anterior black chevron of the elytra broadly joining the posterior along the suture; antennæ black, not at all annulated. Length 8.0 mm. Texas (Llano Estacado).....**discoideus** Lec.

Head wholly bright red, the prothorax black, not red at apex or base..4

4—Body moderately slender, convex, densely cinereo-pubescent and with many long erect black hairs, the under surface, legs and antennæ deep black, the last with very numerous erect black hairs beneath and with the bases of the joints finely annulate with cinereous; prothorax nearly one-half wider than long, the middle of the sides broadly rounded and only feebly prominent, the subbasal constriction stronger than the subapical; surface black throughout, very rarely with a small red cloud at the sides just before the middle, the punctures rather small, very sparse, the four velvety-black spots distinct, the two longitudinal pairs separated by a flat, elongate-oval surface, which is very abruptly but only extremely slightly elevated; elytra very coarsely though not at all closely punctate, more finely toward tip, the small cinereous hairs sparse

on the red parts, dense on the black, excepting the velvety-black spot; semi-erect hairs of the under surface shorter, sparser and cinereous. Length (♂ ♀) 7.0–8.0 mm.; width 2.7–2.9 mm. New Mexico (Fort Wingate). Eight examples.....**nigricollis** n. sp.

Body similar to the preceding but rather more depressed, slightly narrower and smaller, the antennæ more slender and not at all annulate, the prothorax much more coarsely and closely punctate on the similarly very feebly elevated medial part, but more finely and sparsely laterad, the sides nearly similar, the uniformly black color however variegated by a quadrate red spot at each side of the apex; elytra nearly similar, except that the cinereous vestiture is more uniformly, though not very densely, distributed throughout. Length (♂ ♀) 5.3–7.7 mm.; width 2.0–2.5 mm. Arizona (locality unrecorded). Three examples.

nanulus n. sp.

5—Body much larger and stouter than in the three preceding, convex, bright red throughout above, except the four pronotal spots, the humeri and the two sutural chevrons, the anterior of which is sometimes much reduced in size and very rarely almost obsolete; under surface, legs and antennæ black, the anterior legs sometimes rufo-piceous and the antennæ not at all annulate; erect black hairs of the upper surface shorter, finer and more numerous than in the preceding section, the antennal fringe much less developed, disappearing apically; prothorax one-fourth to one-half wider than long, the sides obtusely and moderately prominent at the middle, the surface only very finely and sparsely punctulate and with the central elevation gradually formed, its lateral limits barely traceable; elytral punctures relatively rather small, moderately close-set. Length (♂ ♀) 7.8–11.0 mm.; width 2.6–4.2 mm. Long Island, New Jersey and Pennsylvania. [*arator* Germ.].....**canteriator** Drap.

6—Form stout, convex; color deep black throughout, with erect black hairs and cinereous vestiture, the head red, the red elytra covered in great part by the largely expanded and suturally coalescent black chevrons, the posterior not acuminate antero-laterally in the usual posterior rounded black spots as in all the preceding, but truncate anteriorly along the posterior spots, which are transversely lineiform, the anterior juxta-sutural black spots also transversely lineiform; antennæ black, not annulate but more cinereous beneath than above; prothorax but slightly transverse, only feebly protuberant medially at the sides, finely, sparsely punctate, without trace of the usual four velvety-black spots but with the elongate medial region abruptly and very strongly elevated, shining, subglabrous and sparsely and rather finely punctate; elytra coarsely, not densely punctate, abruptly finely so in the posterior black area. Length (♂) 11.0 mm.; width 4.0 mm. Lower California (San Jose del Cabo),—Fuchs.

elegans Horn

7—Legs black, sometimes feebly and indefinitely piceo-rufous but only from immaturity.....8

Legs partially red; body as a rule much larger in size; antennæ always annulate.....14

8—Post-humeral spot, near the margin, always wanting.....9

Post-humeral spot not only always present, but the largest and peculiarly modified, in being elongate, sometimes confluent with the anterior juxta-sutural spot 13

9—Antennæ without trace of annulation and with the lower fringe reduced to a very few short hairs. Body elongate, convex, rather shining; cinereous vestiture above sparse and scarcely visible, the erect hairs few in number; color rufous, the elytra rather less red; head coarsely, unevenly punctate, with a fine entire subcallous median line, the antennæ dark brown, with brownish vestiture, black basally, the scape rufescent basally; prothorax one-half wider than long, with the lateral prominences strong, the four spots small, piceous; surface very finely, sparsely punctate, the median umbo abruptly and moderately elevated; scutellum black as usual; elytra with moderately coarse and not very close-set, deep punctures, which become rather abruptly much finer and very sparse in nearly inner third; legs subuniformly and slightly picescent, probably from immaturity. Length (♂) 12.0 mm.; width 3.8 mm. California (locality unrecorded) . . . . . **omissus** n. sp.

Antennæ brownish-black, deep black basally, each of the outer joints with a very fine annulus of cinereous hairs. Body small in size, with even and not at all dense cinereous vestiture above and with many erect bristling blackish hairs, the vestiture closer beneath but not very dense, not concealing the integument on the legs, which are somewhat piceous; head finely, not closely punctate, the fine median line blackish; prothorax transverse, obtusely and moderately protuberant at the sides, the four black spots small; punctures fine and sparse, the median tumescent region convex, not abruptly elevated; elytra coarsely, not densely punctate, gradually rather finely so apically; posterior discal spot shading off almost imperceptibly behind. Length (♀) 7.2 mm.; width 2.4 mm. New Mexico . . . . . **quinquemaculatus** Hald.

Antennæ black, strongly annulate with cinereous bands, each formed of a narrow band at the apex of one joint and another at the base of the succeeding joint 10

10—Cinereous vestiture of the upper surface not at all dense and scarcely at all modifying the bright red color of the elytra. Body oblong, convex, shining, bright red, having many long erect black hairs, the under surface clothed densely with cinereous-blue vestiture, the legs all intensely black; head moderately punctate; antennæ black throughout, the long erect hairs beneath moderately numerous, the first three joints bristling with longer blackish and more decumbent cinereous hairs; prothorax transverse, with large rounded lateral prominences, the spots moderate, the two anterior smaller than the posterior; punctures fine and sparse, coarser and closer on the narrow elongate and feebly convex umbo, which is very abruptly elevated; elytra coarsely, rather sparsely punctate, very finely so apically, the spots moderate, unmodified, the apices not darker. Length (♂) 10.0 mm.; width 3.55 mm. Mexico (Colonia Garcia, Chihuahua),—C. H. T. Townsend . . . . . *__nigripes__ n. sp.

Cinereous vestiture above extremely dense, giving a strongly pruinose or

velvety effect, the erect hairs extremely short, cinereous, not distinctly visible in *canescens*, the prothorax with a few stiff erect black hairs at the sides; elytra black at the apices.....11

11—Erect hairs of the elytra distinct by oblique light, though short, the cinereous vestiture everywhere extremely dense, even throughout the median parts of the pronotum, which are glabrous in *canescens*. Body subcylindric, pale reddish-brown; head rather closely cinereo-pubescent, the antennæ densely cinereous beneath throughout, annulate only above, the three basal joints densely cinereous and with erect black bristles; prothorax one-half wider than long, the sides rather abruptly prominent medially, the spots distinct, the umbo somewhat abruptly elevated but not very distinctly and with its sides not rounded but medially angulate and prominent; elytra rather strongly but not closely punctate; under surface and legs very densely cinereo-pubescent. Length (♂) 9.8 mm.; width 3.25 mm. Colorado.....**vestitus** n. sp.

Erect hairs of the elytra excessively short, scarcely discoverable even by oblique illumination; cinereous vestiture nearly wanting on the thoracic umbo; antennæ not cinereous beneath.....12

12—Form less stout, red, the prothorax sometimes black at base or at base and apex; head nearly as in the preceding; antennæ blacker, the three basal joints subsimilarly clothed; prothorax nearly similar in form, the four velvety spots relatively larger, the median region shining, sparsely punctulate, somewhat convex, rather abruptly sloping from its broadly angulate sides and more densely cinereous; elytra with rather more inflated humeri, somewhat strongly but sparsely punctate, densely cinereous throughout, densely cinereous beneath, the legs sometimes faintly and subuniformly rufescent (*annulatus* Lec.), apparently from immaturity. Length (♂♀) 8.5–12.8 mm.; width 3.0–4.3 mm. Texas (El Paso) and New Mexico (Jemez Springs). Very abundant.....**canescens** Lec.

A—Similar to the preceding but a little more slender, much less densely cinereo-pubescent and with the elytra not red but pale yellow-brown; antennæ with the cinereous bands not quite so well defined beneath, owing to some disseminated cinereous hairs; prothorax nearly similar but much less pubescent; elytra narrower, not so inflated basally, with much sparser cinereous vestiture and rather sparser punctures; legs similar. Length (♂) 10.0–10.6 mm.; width 3.4–3.7 mm. New Mexico (Las Vegas Hot Springs),—Snow.....**fontinalis** n. subsp.

Form stouter, the size larger, brownish-red above, densely clothed with cinereous hairs, which however are not quite so dense as in *canescens* and rather sparse at the sides of the elytra from the humeri nearly to the apex; head broadly, feebly concave between the antennæ, which are relatively shorter and stouter than in *canescens*, but otherwise similar above and beneath; prothorax similar, except that the surface medially from side to side is less pubescent, the four spots smaller and the medial convexity more coarsely punctate; elytra less swollen basally, more broadly and obtusely rounded at apex and with the punctures less coarse and much sparser; dense vestiture

of the under surface more whitish and less bluish; fifth ventral (♀) broadly angulate at tip and not transversely truncate as it is in *canescens*, similarly two-thirds longer than the fourth, the erect hairs less blackish, or (♂) barely at all longer than the fourth, with the truncate apex half as wide as the base and much broader than in *canescens*. Length (♂ ♀) 10.0–12.5 mm.; width 3.8–4.7 mm. Utah (Marysvale),—Wickham..... **uteanus** n. sp.

13—Body rather stout, convex, shining, red, the entire under surface, legs and antennæ black; cinereous vestiture above very minute, not dense, the erect hairs moderate and black; antennæ with the first three joints deep black and coarsely, sparsely nigro-pubescent, the remainder brownish-black and clothed very densely with short fuscous pubescence, not at all cinereous basally; prothorax distinctly narrower than the elytra, the lateral prominences strong, the umbo broad, subrhomboidal, rather abruptly formed, the four spots unusually large; elytra oblong, the humeri not tumid; punctures rather strong but sparse, fine apically. Length (♂ ♀) 9.0–14.5 mm.; width 3.2–5.0 mm. New York (Lake Champlain), Pennsylvania to Iowa (Keokuk). [*Lamia tornator* Fabr.]..... **tetrophthalmus** Forst.

Body less stout, more parallel, brighter red, rather less shining, the under surface, legs and antennæ nearly as in the preceding; prothorax more transverse and very nearly as wide as the elytra, the central umbo similar but evenly rounded at the sides and less strongly punctured, the spots similar; elytra similarly maculate but with the punctures coarser and more close-set; humeri differing remarkably, being abruptly prominent, rounded and knob-like; under surface grayer. Length (♂) 12.0 mm.; width 4.2 mm. Dakota... **humeralis** n. sp.

14—Four black spots of the pronotum forming a quadrangle which is distinctly wider than long, sometimes strongly transverse and with the two spots on each side connected longitudinally.....15

Four black spots forming a square or very nearly, except in *obsoletus* and *coccineus*, where they form a more transverse rectangle, though with no tendency to unite longitudinally.....18

15—Smaller species, the vestiture of the upper surface only moderately dense and not very conspicuous.....16

Large species, the vestiture above extremely dense, producing a velvety appearance and having (♀) a denuded spot near the apex of each elytron, not visible in the preceding.....17

16—Body stout, convex, the elytra unusually short, bright red above, the under surface and legs black and densely clothed with yellowish-gray pubescence, the femora all red but black at their extreme apices; erect hairs black, long on the prothorax, moderate on the elytra; antennæ (♀) short, three-fourths as long as the body, the first three joints bristling as usual with numerous erect hairs and having some ashy pubescence, the scape partially tinged with red; prothorax transverse, moderately prominent at the sides, the umbo strong, elongate, abruptly formed, with broadly arcuate sides and rather coarse sparse punctures, not impressed; spots very close longitudinally and joined by a black vitta along the sides of the umbo; elytra but little more than one-half longer than wide, all the spots well

developed, except the post-humeral, which is wholly wanting in the type; punctures rather coarse, not dense and not very even in distribution. Length (♀) 13.0 mm.; width 4.8 mm. A single example without designation of locality, but probably from Colorado.

junctus n. sp.

Body much narrower and more elongate, not so bright red, the elytra often yellowish, the erect setæ above black, longer and more conspicuous; antennæ similar; prothorax (♂) similarly transverse, nearly twice as wide as long, almost as in *junctus* throughout, the spots approximate longitudinally and partially joined by black along the umbo, the anterior margin not thickened and convex as it is in *junctus;* basal margin black, or (♀) much less transverse, with the spots not joined; elytra with all four spots well developed, the post-humeral obliquely subquadrate (♂), smaller (♀); punctures coarse, more numerous than in the preceding, similarly very fine apically; sutural angles broadly rounded (♂), more narrowly (♀); vestiture beneath dense, olivaceous; legs deep black, the anterior and middle femora red medially, the former only on the anterior face, the latter on both. Length (♂ ♀) 11.8–12.4 mm.; width 4.4–4.8 mm. New Mexico (Las Vegas),—Snow. . . . . **vegasensis** n. sp.

17—Moderately stout, convex, dull red to brick red, the integument largely concealed by the dense cinereous vestiture almost as in *canescens*, the erect hairs extremely short and cinereous, longer and black on the prothorax; under surface very densely clothed with olivaceous vestiture; all the femora and tibiæ red, the knees and tarsi black, the hind tibiæ obscure in the female; antennæ rather long, black, clothed as in the preceding, the scape generally red, black at apex, but sometimes almost completely black; prothorax (♂) two-thirds wider than long, the quadrangle of spots rather more transverse in the male, the lateral prominences strong, the umbo strong and abrupt, coarsely punctate, with broadly rounded sides; base and apex concolorous; elytra somewhat expanded at the humeri in both sexes, the four spots well developed, the posterior transversely oval, the post-humeral larger than in any other western species, obliquely subquadrate to irregularly oblong, more obscured by the vestiture than any of the others; punctures moderately coarse and rather sparse; the three females have a rounded denuded apical spot not visible in the single male; abdomen unusually protruded behind the elytra in the female. Length (♂ ♀) 14.0–16.8 mm.; width 5.0–6.0 mm. Kansas (Finney and Hamilton Cos.),—Menke and Hunter.

velutinus n. sp.

18—Upper surface densely clothed with cinereous vestiture, giving a strongly pruinose effect. 19

Upper surface much less densely clothed, never giving more than a feebly pruinose effect. 20

19—Body large and very stout, almost as in the preceding but stouter and with the elytra (♀) scarcely at all expanded at the humeri, though evidently so (♂); upper surface dull red, the under surface black, very densely clothed with ashy-gray vestiture, the legs colored as in *velutinus;* erect hairs short, cinereous, rather distinct; antennæ

similar but stouter and a little shorter, the scape red, tipped with black; prothorax nearly as in *velutinus* but much less transverse, with less protuberant sides, the umbo more conspicuous, more strongly and very abruptly elevated, the sides almost straight, its surface more impressed on the median line posteriorly; elytra shorter, the punctures slightly coarser and closer and very much more distinct, the spots similar, except that the post-humeral is always much smaller; abdomen (♀) much less prolonged behind the elytra; coriaceous hind margins of the segments (♂) very much broader than in the preceding, short in the female. Length (♂ ♀) 15.5–16.5 mm.; width 5.8–6.2 mm. Three examples from the Levette collection, without labels but probably taken in Colorado.

robustus n. sp.

Body much smaller, more slender, rather pale brick-red above, the cinereous vestiture not quite so dense, the erect hairs cinereous, very short, scarcely discoverable, longer but palish on the prothorax, the black under surface densely clothed with whitish-cinereous vestiture; femora and tibiæ pale red, the latter sometimes partially black; antennæ as in the preceding but more slender, the scape bright red, tipped with black to black, feebly rufescent medially; prothorax nearly as in the preceding, the very abrupt umbo parallel, very feebly arcuate at the sides and impressed only with a very fine groove at the extreme base; elytra subparallel, only slightly expanded at the humeri, strongly but not very closely punctate, the four spots distinct, the post-humeral subquadrate but not larger than the anterior discal, the posterior as usual blacker and more velvety, transversely oval. Length (♂) 12.7–14.0 mm.; width 4.6–5.0 mm. Kansas,—F. H. Snow. . . . . **brevisetosus** n. sp.

20—Elytra finely and sparsely punctate; post-humeral spot generally obsolete. Pacific coast faunal region. 21

Elytra strongly and more closely punctured. Rocky Mountain region and to the eastward 22

21—Body larger in size, pale red, the elytra pale brownish-yellow, moderately shining, the cinereous vestiture not conspicuous, the erect hairs short, cinereous, the black under surface clothed densely with olivaceous vestiture; femora red, the knees black; tibiæ blackish to evidently rufescent; antennæ rather stout, the fourth joint largely clothed with cinereous as well as the first three, the scape red, tipped with black; prothorax transverse, the lateral prominences strong, more angular than in the Rocky Mountain species, the umbo strongly, very abruptly elevated, its sides parallel, distinctly and evenly arcuate, the median line always impressed basally and sometimes throughout the length, the punctures strong but not approaching the sides of the umbo; elytra oblong, with unusually fine and very sparse punctures throughout, the anterior juxta-sutural spot well developed, oval, slightly transverse, the posterior large, slightly transverse, oval, the post-humeral very small in the type and wholly wanting in the other two examples; tarsi rather broad, the second joint of the posterior not quite as long as wide and only feebly,

arcuately narrowed from apex to base. Length (♀) 15.0–16.0 mm.; width 5.7–6.0 mm. California (locality not recorded).

sublævis n. sp.

Body much smaller, strongly shining, deeper and bright red, the under surface densely clothed with very fine slaty-blue hairs; legs black, the femora all red, the knees black; vestiture above very fine, cinereous and inconspicuous, the erect black hairs rather long and distinct; antennæ short, three-fourths as long as the body, black, the annulations very much narrower than usual as in the preceding, the three basal joints with but few cinereous hairs, the scape rufous, tipped with black to gradually black almost from the base; prothorax distinctly wider than long and arcuate at apex, the lateral prominences very moderate and broadly obtuse, the umbo abruptly, moderately elevated, with evenly arcuate sides and strong scattered punctures, the median line not only without vestige of impression but, as a remarkable exception, tumid at base; elytra short, but little more than one-half longer than wide, the punctures distinct and moderately sparse, much stronger than in the preceding, the spots moderate, the post-humeral always wanting; male with the fifth ventral slightly longer than the fourth, its apex unusually deeply sinuate medially, or (♀) much longer than the fourth, with the apex truncate medially; female of the two type specimens much smaller than the male. Length (♂♀) 10.5–12.0 mm.; width 3.7–4.7 mm. California (Siskiyou Co.),—Koebele.....**obsoletus** n. sp.

Body nearly similar but more elongate, with longer though otherwise similar antennæ and different male sexual characters, similar in coloration, sculpture and vestiture above but beneath having the dense vestiture paler, more ashy and notably longer and coarser; prothorax and elytra nearly similar in sculpture, shining lustre and maculation; male with the fifth ventral segment but just visibly longer than the fourth, with its apex feebly sinuato-truncate, the truncature about half as wide as the base; tarsi larger and longer, the basal joint especially much longer and, on the anterior, more inflated. Length (♂) 12.0–12.6 mm.; width 4.5–4.7 mm. California (without indication of locality).....**coccineus** n. sp.

22—Vestiture of the under surface cinereous to ochreo-cinereous; upper surface generally pale red to yellowish-red.....23

Vestiture beneath cinereous-blue to deep slaty-blue; upper surface generally deep red, the body stouter and larger.....25

23—Thoracic umbo broadly and deeply impressed in almost basal half. Body strongly convex, rather shining, pale red, the cinereous vestiture above not at all conspicuous, the erect hairs rather short, cinereous; antennæ black, rather thick, not quite as long as the body, strongly annulate, the basal joint bright red; prothorax moderately transverse and protuberant at the sides, the umbo very strongly elevated and extremely abrupt, flattened above and coarsely punctate; elytra oblong, the four black spots distinct, subequal among themselves, the punctures unusually coarse, deep and rather close-set, fine but distinct apically; under surface black, densely clothed with coarse ochreo-cinereous vestiture, the fifth segment (♂) not longer

than the fourth, broadly truncate medially at apex; legs red, the tarsi rufo-piceous, the hind tibiæ infuscate basally, the knees throughout dark. Length (♂) 13.8 mm.; width 5.2 mm. Texas.

punctipennis n. sp.

Thoracic umbo not at all impressed or only very finely and feebly at the posterior end.....24

24—Elytra shorter, not more than three-fourths longer than wide. Bright brick-red in color, the entire under surface of the hind body and anterior coxæ deep black; legs red, the knees black, the two anterior tibiæ at base and apex, the posterior wholly, black, the tarsi black but with reddish-pubescent soles; cinereous pubescence of the upper surface feeble and inconspicuous, of the under moderately dense and somewhat fusco-cinereous; erect hairs long, numerous and black; head sparsely punctate; antennæ black, annulate, nearly as long as the body (♂), the scape red, black at apex; prothorax one-half wider than long, the lateral prominences strong, rounded, the umbo rather narrow, with feebly arcuate sides, strongly and abruptly elevated, sparsely and not very coarsely punctate; elytra strongly but not closely punctate, the spots distinct, the post-humeral occasionally wanting. Length (♂♀) 11.0–12.8 mm.; width 4.0–4.8 mm. New Mexico (Fort Wingate),—Shufeldt. . .**atrisetosus** n. sp.

Elytra longer, about twice as long as wide, more obscure red, the cinereous hairs of the upper surface more numerous, giving a moderate bloom, the erect hairs rather short, in great part cinereous; under surface black, densely clothed with rather coarse olivaceo-cinereous pubescence; legs black, the femora red, the two anterior tibiæ also sometimes in great part rufous; head less sparsely punctate; antennæ nearly similar, except that the scape is black, rufescent medially above; prothorax a little more transverse, the strong lateral prominences more narrowly rounded, the umbo a little broader, with more arcuate sides and coarser and more numerous punctures; basal margin black throughout the width; elytra coarsely, rather closely punctate, more closely medially except toward the suture, the four spots well developed. Length (♂) 13.0 mm.; width 4.8 mm. Colorado.....**femoratus** Lec.

A—Similar but still more slender in form and with the punctures less coarse and not so close-set, the erect hairs a little longer, cinereous; antennæ similar but notably shorter, much shorter than the body; prothorax nearly similar, the base blackish only at the sides; legs entirely black, all the femora red; under surface similar. Length (♂♀) 11.8–12.3 mm.; width 4.2–4.5 mm. Iowa (Keokuk).

amnicola n. subsp.

B—Smaller, still more slender and not quite so convex, the punctures less coarse than in *femoratus* and decidedly sparser, the erect hairs much longer, fuscous and cinereous; antennæ as in *amnicola;* prothorax similar, except that the lateral prominences are not so strong and much more broadly rounded, the umbo similarly very strongly and abruptly elevated but limited behind by a more distinct transverse sulcus; base feebly nigrescent at the sides; pubescence of the under surface finer and shorter than in the two

preceding and bluish-cinereous, somewhat as in the three following species. Length (♀) 11.8 mm.; width 3.8 mm. Utah.
monticola n. subsp.

25—Under surface of the body red, excepting the median parts of the metasternum and the abdomen, which are black or blackish, the met-episterna always red. Body moderately stout, shining, bright red, the cinereous hairs of the upper surface very inconspicuous, the erect hairs rather long, cinereous, black basally and on the prothorax; dense vestiture of the under surface coarse and bluish-cinereous; legs red, the tarsi black; head coarsely, sparsely punctate, the antennæ annulate, black and not quite as long as the body (♂), the scape red; prothorax transverse, with strong and broadly rounded lateral prominences, the umbo rather narrow, very strongly and abruptly elevated, sparsely punctate; elytra moderately elongate, slightly swollen at the humeri, coarsely, rather closely punctate, the spots moderate in size, the post-humeral generally obsolete. Length (♂) 13.0–14.0 mm.; width 5.0–5.2 mm. Arizona (southern). Levette collection. Three similar examples.....**ruber** n. sp.

Under surface of the entire hind body deep black.....26

26—Form moderately stout, shining, deep red, the vestiture above very feeble and indistinct, beneath slaty-blue; erect hairs rather long, stiff, black; legs black, the femora and generally the first two tibiæ red; antennæ rather long and heavy, the scape red; prothorax nearly as in the preceding; elytra with rather coarse but somewhat distant punctures, the spots relatively rather small, the post-humeral generally wholly wanting; anterior and middle tarsi (♂) with the basal joint much more dilated than that of the posterior, the middle tarsi nearly as long as the tibiæ; male with the fifth ventral slightly longer than the fourth, the apex broadly truncate medially; upper and lower flat horizontal plates of the intromittent organ broad, parallel sided, abruptly and rapidly, arcuately narrowed at apex and acutely produced medially for a short distance, the two plates subsimilar in form and rather closely applied. Length (♂♀) 11.2–14.6 mm.; width 4.0–5.5 mm. Arizona (Oak Creek Cañon),—F. H. Snow.....**spissicornis** n. sp.

Form stout, larger, broadly convex, similar in coloration and vestiture; antennæ rather long and thick, similarly annulate and with the basal joint red; head coarsely, not closely punctate; prothorax nearly as in the preceding, the very strongly elevated and extremely abrupt umbo parallel, with its sides evenly and barely visibly arcuate, coarsely punctate except toward its lateral edges and defined at base by a fine deep transverse groove; elytra coarsely, very evenly but not very closely punctate, the spots all present but small, except the posterior, which is well developed; surface with the feebly pruinose covering of cinereous hairs removed in a small spot near the apices as in *velutinus*. Length (♀) 17.5 mm.; width 6.5 mm. Mexico (Durango City),—Wickham.....***fortis** n. sp.

Elegans Horn, is the most aberrant of our species in the absence of the four pronotal spots and very strongly elevated and extremely

abrupt shining thoracic umbo, but its derivation from the *discoideus* type is sufficiently evident. I am uncertain whether the example described above as *quinquemaculatus* Hald., really represents that species, as there is a very fine feeble antennal annulation—perhaps overlooked by LeConte; the size is much smaller, though this is not at all significant in view of the very great variation in size characterizing most of the species, but the locality is far removed from that of the type of the species, which is said by LeConte to be Sault St. Marie, Michigan. I have omitted *texanus* Horn, not having seen a specimen; it is said to be allied to *quinquemaculatus* but with red scape and femora; without much doubt it is a valid species, not at all closely allied to *quinquemaculatus* but rather to be associated with the *femoratus* group, the gradually formed thoracic umbo not being a character of so great value as supposed, considering the diversity of this part in the *discoideus* group, which, as shown by other more general features, is a perfectly natural section of the genus. *Mancus* Lec., should come in the table immediately after *omissus*, from which it differs in its annulate antennæ. It is probable that *collaris* Horn, which I have not seen but which is very aberrant in the opaque thoracic umbo, would be best placed in the *femoratus* group and near that species in the table; it is from New Mexico. *Oregonensis* and *basalis* of LeConte, may be placed at the end of the table as requiring further study; the first, at least, is certainly not represented in my material, and it is improbable that either *ruber*, *atrisetosus* or *spissicornis*, the only available ones in this connection, can be the same as *basalis*, because of the very strong and abruptly elevated thoracic umbo. *Humeralis* is unique in the genus by reason of the very remarkable abruptly tumid black elytral humeri, which, even if aberrational in the single type, would not invalidate the species, as the prothorax is much broader and more transverse and the head larger than in *tetrophthalmus;* it is also more parallel and very much more strongly punctured than *tetrophthalmus* Forst.* Western examples of the latter species are a little larger, more elongate and more punc-

*I here follow LeConte in writing *tetrophthalmus* and not *tetraophthalmus*, as given by Horn and followed by Bates. Specific words can be altered to accord with etymological usage, which however is not the case with generic words, the latter being unalterable.

tate as a rule than those from the coast regions, though otherwise nearly similar; they form, in fact, a very well marked variety of *tetrophthalmus*, which may be designated subspecies **iowensis** nov.

Tetrops Kirby.

The small species of this genus are individually rather rare in collections. They are allied to *Tetraopes* in general organization but are narrower and more cylindric, the prothorax biconstricted but only very feebly and broadly prominent at the sides, the elytral punctures relatively coarser, denser and subserial and the antennal joints beyond the fourth abruptly abbreviated; they also have some affinity with *Oberea* of the preceding tribe. My two representatives of *canescens* Lec., are from Kansas, and the single example of *jucunda* Lec., from Pennsylvania. *Monostigma* Hald., having the legs red, I have not seen. The following is allied to *jucunda*, but can readily be distinguished as stated below:

Tetrops expurgata n. sp.—Form nearly as in *jucunda* and with nearly similar fuscous vestiture and erect hairs, black, shining, the head and prothorax throughout bright red, the latter without trace of dark central maculation; legs and antennæ black, the joints of the latter beyond the fourth abruptly much abbreviated and pale brown in color throughout; head finely, sparsely punctate, broadly and feebly concave between the antennal tubercles; prothorax a fourth wider than long, parallel, the basal constriction deep and confusedly punctate, the apical shallower, the central callus feeble, only evident behind the anterior constriction and with a few punctures, the surface elsewhere impunctate except in the basal constriction; apical margin notably thickened; scutellum small, triangular, with very few fine punctures; elytra shining, with series of coarse oval perforate punctures, confused though only slightly smaller apically, the sculpture as in *Oberea;* abdomen shining, sparsely punctulate and hairy; legs short and slender. Length (♀) 7.7 mm.; width 2.2 mm. Indiana. Levette collection.

Differs from *jucunda* in its slightly stouter form, coloration of the antennæ, the joints beyond the fourth in that species, as well as *canescens*, being black or blackish, with only their extreme bases paler, in the shorter and less punctate, wholly immaculate pronotum and in the coarser and less close-set elytral punctures, the interspaces being more shining, owing to the much less evident, or in fact barely traceable, fine subgranular sculpture of *jucunda*.

The genus *Phœa* of Newman, is closely related to *Tetrops* and bears a still greater resemblance in sculpture to *Oberea*, the antennæ

being as in that genus though shorter, the joints beyond the fourth not being abbreviated; it differs from *Tetrops* also in the irregularly, longitudinally bisulcate and very differently biconstricted prothorax, at least as shown in my series of *Phœa vitticollis* Bates.

NOTES.

Mem. Col., III, pp. 344–345—*Tylosis bifasciata* Csy., should be advanced to specific rank and *conjuncta* and *parva* Csy., united therewith as slight modifications, scarcely worthy of separate names. All the other species described seem to be valid.

Mem. Col., III, p. 355—On page 384 of his recent catalogue, M. Aurivillius has placed *Cyllene chara* Say, as a modification of *decora* Oliv.; this is decidedly wrong; it is not a variety but an amply valid species. The author has nevertheless given names to the variations of *chara* indicated by G. H. Horn; of these *horni* Auriv. is typical *chara*, which was misidentified by Horn on the plate referred to, as can be seen readily by consulting Say's original description, where it is stated that the elytra are solidly yellow in basal third. The *mediana* of Aurivillius is the same as *solida* Csy., and of course takes precedence of the latter name because of priority. *Arhopalus lutosus* Lec., cannot be any modification of *chara* or *decora*, though it is unknown to me at present. As for *brevipennis* Lec., I am inclined to think that the remarkable protrusion of the abdomen in the type is accidental, and that the name may refer to an extremely immature male of *Xylotrechus obliteratus*.

Mem. Col., III, p. 365—I have recently received from Prof. Cockerell the male of *Xylotrechus obliteratus;* the elytra have the markings partially obliterated by a uniform suffused clothing of pale hairs, as in the males of *insignis* and *incongruens*. *Diruptus* Csy., should be united with *insignis;* the differences appear too slight to warrant even the status of a subspecies. A male of *Xylotrechus salebrosus*, also recently received, is shorter and with much more rapidly cuneiform elytra and shorter legs than the male of *cylindrus*, and proves that the two species are distinct.

Mem. Col., III, p. 374—The name *Paraclytus* is preoccupied by Bates and may be replaced by **Triodoclytus** (nom. nov.).

Mem. Col., IV, p. 327—The example from the Catskill Mts., referred to *cryptica*, does not belong to that species but to *variolata*.

In all the numerous representatives of the latter, the large posterior spot extends to and is truncated by the lateral carina, while in *cryptica* it is always isolated and rounded,—apparently a trivial character but notably constant.

Mem. Col., IV, p. 331—Some time after the matter relating to *Graphisurus pusillus* had been put in type I discovered by chance that reference had been made to this subject by Mr. Schaeffer (Ent. News, 1902, p. 236), whereby it seems that it was, even at that time, the opinion of Mr. Leng that the true *pusillus* of Kirby was the species so identified by myself, as cited above. That we should have arrived at the same result by independent routes tends at any rate to be confirmatory, and if Mr. Leng had also determined that our so-called *Acanthocinus* should, as a consequence, be known henceforth under the name *Graphisurus*, he would have still more fully expressed the reality in my opinion.